vol. 14 no. 3 (55)
July 1990

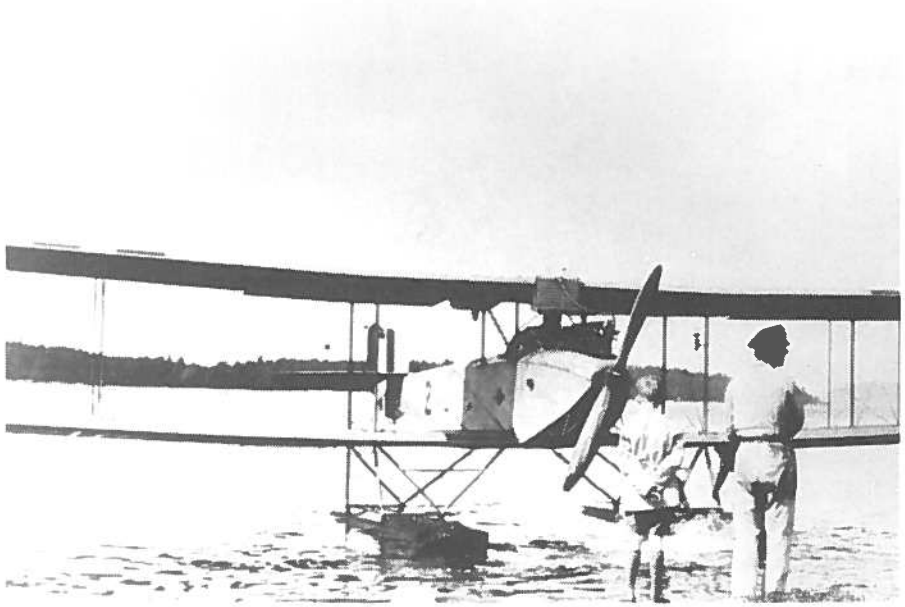
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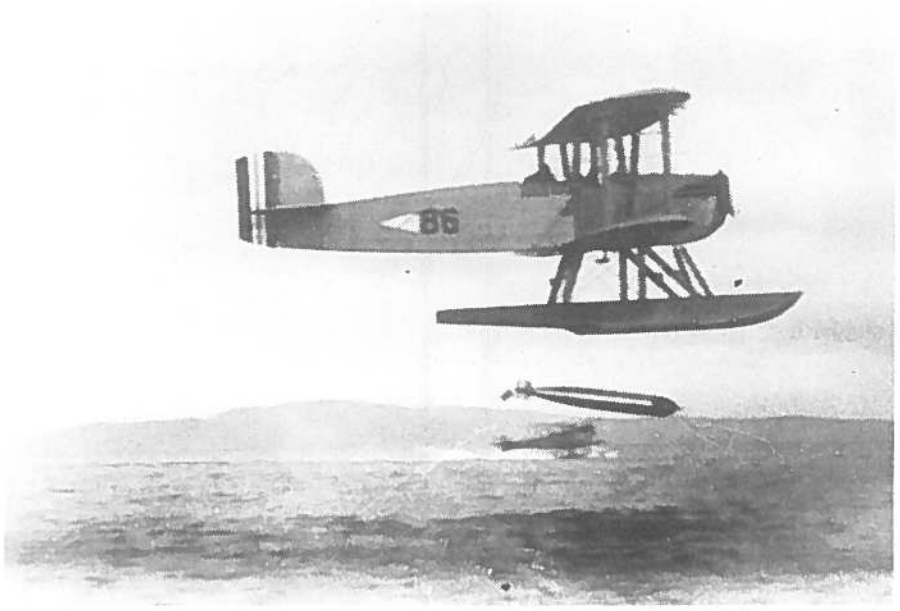


NORWEGIAN AIR SERVICES, APRIL 1940
SMALL AIR FORCE T-BIRDS
SWEDISH HEINKEL He-5
RAAF SABRES
AIR FORCE EMBLEMS OF SIGNAPORE

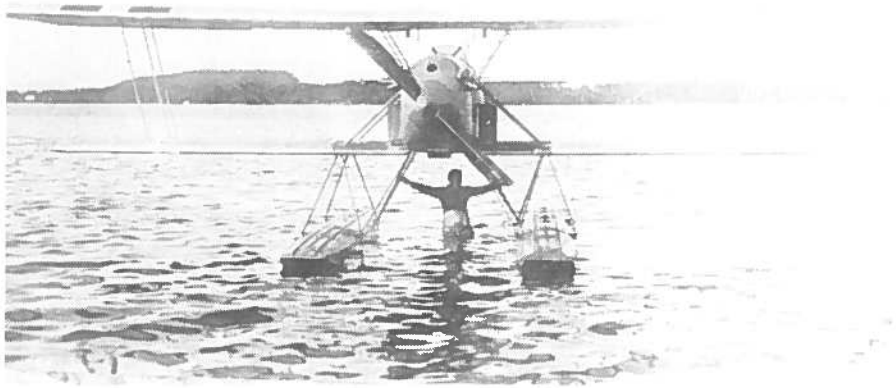
vol. 14 no. 3 (55) July 1990



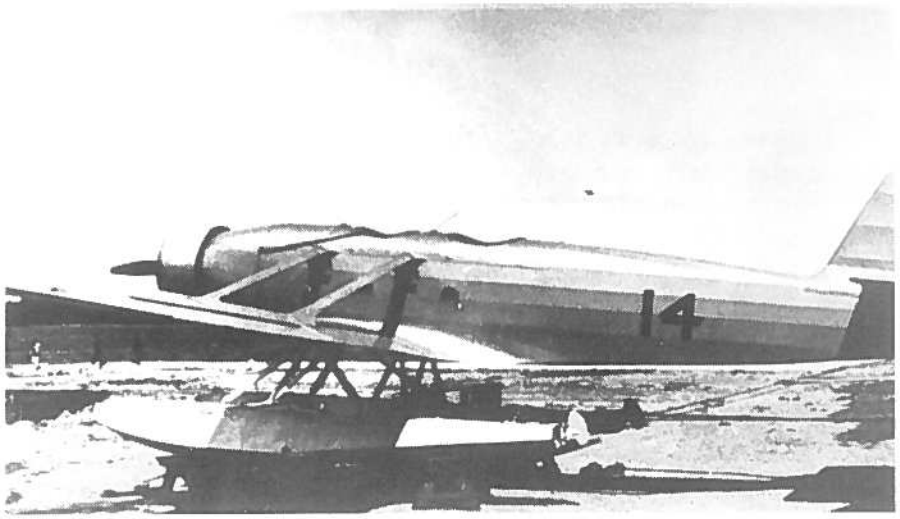
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SMALL AIR FORCES OBSERVER

The Newsletter of the Small Air Forces Clearing House

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SAFO EDITORIAL POLICY: The purpose of the SAFCH is to "promote interest in the history and modeling of the aircraft of the smaller countries". In support of this goal, the SAFCH encourages international cooperation in researching the history of aviation on all aspects of aviation, both military and civil, from all periods of time, and for all the smaller countries. In return for this support, members are asked to submit occasional progress reports for publication in the SAFO. While the final results should appear in the most prestigious publication possible, it is requested that the SAFCH be mentioned (with address) in the article and that SAFO be afforded the opportunity of reprinting the material.

SUBSCRIPTION RATE: Subscription to the current volume of the SAFO is US $8.00 for 4 issues per year via surface mail. For air mail delivery. add $7.25 for Europe and Latin America or $9.50 for Asia, African, and Australia. Payment should be made in cash, by International Money Order, or by a check from a bank with a subsidiary in the US. (There's a $25 charge to cash a check from a bank without a US subsidiary.) New subscriptions begin with all issues of the volume current at the time payment is received; if you desire otherwise, please specify with your payment which issues are desired. Send remittance to Jim Sanders, 27965 Berwick Dr., Carmel, CA 93923 USA.

BACK ISSUES: Either Back issues or Xerox copies of out-of-print issues are available for all issues of the SAFO published. For a list of back issues and their costs, see the "SAFCH Sales Service" sheet in this issue. For a list of all issues and their content, send two 1st class stamps (or 2 IRCs) to the editorial office.

INFORMATION FOR AUTHORS: Manuscripts may be submitted in any form; authors whose first language is not English may submit a rough translation of the text and the editorial office will put it into good English. Authors using a computer should send the manuscript on disc. Photo should be black and white prints although color prints can be used. If you want any prints returned and if you do not want them to be cut, please, mark "Return" and "Do not crop" on the back of the print. All art work must be ready for printing. It is best to plan for the art to be reduced to 75% in printing and the finished drawing should fit into the 7.5 inch by 10 inch working area of the final page. Art work that does not fit this requirement will have to be cut and pasted to fit; no problem, but things might not look exactly as you want them to look. All work for the SAFO is voluntary and no payment can be made for published material.

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COVER COMMENTS: A Norwegian Fokker C-Vd from the Speidervigen is shown at Fesor, southeastern Norway on 11 April 1940. Note the skis, Colt machine gun, and makeshift camouflage that extends even onto the blue of the national insignia. (Skarphol Collection)

PHOTO PAGE 70:

(a) The MF-8 basic trainer was still in use in 1940. (*via* Gulli)

(b) A Douglas DT-2B caught in the act of launching a torpedo. (*via* Gulli)

(c) The MF-10 trainer evolved from the MF-9 fighting seaplane. (*via* Gulli)

(d) The MF-12; only this prototype was built. (*via* Gulli)

PHOTO PAGE 102:

(e) A formation of MF-11s (302, 312, 324) over Horten naval base. (*via* author)

(f) Another view of this trio of MF-11s. (*via* author)

(g) A Breda Be-28 on skis with civil registration LN-EAH. The Norwegian flag on the rudder was standard for civilian aircraft in Norway (*via* author)

(h) A captured MF-11 in German markings KP + MW. The armament has been removed indicating that this aircraft probably was used as a trainer. Another MF-11 was known to carry German markings GM + DV. (*via* Gulli)

AUSTRALIA

AUSTRALIAN PLASTIC MODELLER'S ASSOCIATION (APMA, PO Box 51, Strathfield, NSW 2135; 4 issues sea mail A$27; air mail A$30).
1/90 (16 pages) "Tracker Factors" 11 pages including 4 photos and 8 side-view drawings on modifying to the Hasegawa S-2A into a RAN S-2E/G.

NEWS AND VIEWS (IPMS NEW SOUTH WALES, PO Box 637, Broadway, NSW 2007; 4 issues A$20.00 surface or A$25.00 air mail).
1/90 (32 pages) "Two-Seater Aircraft of the Central Powers" 13 pages including 32 side-view drawings (many Austro-Hungarian, one Turkish Albatros C-III, & one Dutch Fokker C-I). "Friedrichshafen & Gotha 'G'-Type Bombers" 3 pages including 6 side-view drawings. "Night-Fighters & Two-Seat Trainers: Camel & Avro 504" 2 pages including 6 side-view drawings. "Forktail Flyers" 2 pages including 6 side-view drawings of various pushers. "Spad 7.C.1 Colours & Markings" 2 pages including 8 side-views of French aircraft. "Grossflugzeug: AEG 'G' Types & Reisenflugzeug" 2 pages with drawings promised for next issue. ""Austro-Fokkers" 1/2 page including 2 side-view drawings. (A magnificent issue with all the drawings by the editor, but how long can he keep up this pace?)

AUSTRIA

OFH NACHRICHTEN (Oesterrichishe Flugzug Historiker, Kannwegasse 1/15, A-1150, Wien).
1/90 (28 pages) "Zivilluftfahrt in Osterreich 1920" 9 pages including 5 photos and 5 side-view drawings of civil Oeffag D-III and Berg D-I. "Klemm 35" 2 pages including 3 photos of 'OE-ABW'. "Vampire" 5 pages including 2 photos on Austrian Vampire 'OE-VAB' & 'OE-VAC'. Photo: Austrian Saab J-35OE Draken.

BELGIUM

KIT (IPMS Belgium, Te Couwelaarlei 103 bus 21, B-1200 Deurne/Antwerp; 4 issues for US$ 13.00, add $3.00 for airmail, no personal checks accepted). One subscription is available from SAFCH $10.00.
#76 Winter '89 (40 pages) "Alouette II in the Belgian Army" 32 pages including 22 photos (one in color), 6 pages of 1/72-scale drawings and 2 pages of 1/48-scale drawings, 4 pages of detail drawings, and individual aircraft histories.-
#77 Spring '90 (28 pages) "F-84F Thunderstreak in Belgian Service: Part 4; 'Acro' Streaks" 18 pages including 11 photos (3 in color), 8 pages of 1/72-scale drawings, and individual aircraft histories. "Up-Dating Revell's Su-27 Flanker" 6 pages including 4 pages of drawings.

BRAZIL

EM ESCALA (IPMS Brazil, Rua Arquias Cordeiro, 316 S/502, CEP 20770, Meier, RJ. Subscription is $7.00, but they prefer kits or accessories. Send to Antonio Pereira Linhares at the above address.)
1/90 (24 pages) "Pucara in the Malvinas/Falklands War" 3 pages including 3 side-view drawings.

CANADA

RANDOM THOUGHTS (IPMS Canada, Box 626, Stn. B, Ottawa, Ontario K1P 5R7; 6 issues for US $16.00 in US $18.00 elsewhere).
20/5 (24 pages) "The de Havilland Canada DHC-5 Buffalo" 15 pages including 41 photos of Canadian aircraft and their interior.

DENMARK

NYT (IPMS Denmark, c/o Bjorn Jensen, Rosenvaegets Alle 6, 2100 Kobenhavn 0; 4 issues for 90 Dkr surface, 100 Dkr airmail).
#47 (30 pages) "PZL P-46 Sum" 3 pages including 2 pages of 1/72-scale drawings.
#48 (30 pages) "RDAF Heraldy" 4 pages including 4 photos and 6 drawings of squadron badges. "Danish Ecureuil" two pages including one photo and drawing of color scheme. "Avia S-199" 4 pages including scale 3-view.

ENGLAND

MAGAZINE (Neil Robertson, 16 Green St., Greasbrough, Rotherham, South Yorkshire, S61 4EF, 6 issues for £12.00. US subscription agent: Wise Owl Publications, 4314 West 238th St., Torrance, CA 90505; $22.00)
1/90 (24 pages) "Modeling the MiG-17" 2 pages including 1/72-scale drawings. "The GAF Jets" 4 pages including one photo and 2 pages of drawings of Jindivik and Pika jet targets. "The Defiant Fighter: A Kit Basher's Approach" 2 pages.
2/90 (24 pages) "Grumman Wildcat" 8 pages including 4 photos, 12 side-view drawings, & 3 pages of detail drawings. "Canadian Commuter Colours" 2 pages including 9 side-view drawings of Twin Otter (Canada, Argentina, & Peru). "Lightning Prototypes" 5 pages including 9 side-view drawings and information on modeling the BAC Lightning.

PLASTIC KIT CONSTRUCTOR (PAMAG (Publications) Ltd., Unit 308, J.C. Albyn Complex, Burton Rd., Sheffield S3 8BZ; 4 issues £ 15. In USA: J.J. Daileda, 4314 West 238th St., Torrance, CA 90505; 4 issues $18.00).
#23 (28 pages) "Step by Step Kit Review; Percival Prentice" 4 pages including 16 photos. [Editor's note: PKC is quickly becoming "the" modelers magazine with cover to cover kit reviews; think of 28 pages of FSM (FineScale Modeler) Workshop Reviews.]

THE PUTNAM AERONAUTICAL REVIEW, Conway Maritime Press Ltd., PO Box 10, Teignmouth, Devon, TQ14 9HH; 4 issues for $33.00.
March '90 (68 pages) "Aircraft Gun Turrets Prior to WWII" 15 pages including 40 photos. "The Beginnings of US Domestic Air transport: Part 1, Subsidy and Regulation 1919-1928" 12 pages including 18 photos. "Submarine Aviation" 9 pages including 17 photos.

FINLAND

MALLARI (IPMS Finland, PL 798, 00101 Helsinki 10; 6 issues $20.00, add $1.00 for airmail and $1.50 for cashing personal check).
4/89 (16 pages) Nothing of small-air-forces interest.
5-6/89 (24 pages) "Fokker D.XXI (Mercury) 1937-44" 18 pages including 35 photos and 17 side-view drawings.

FRANCE

LA VITRINE DU MAQUETTISTE (IPMS France, 73 rue Alexandre Dumas, 75020 Paris; 4 issues 60 FF surface, 80 FF air, back issues 12 FF, "La Lettre de l'IPMS" 25 FF).
#38 (48 pages) "Dornier D0-24K en Service dans la RAAF" 4 pages including 11 photos. "Gotha P60C" 2 pages including 1/72-scale drawing. "Junkers Ju-287" 3 pages on building the Airmodel kit. "Les Halifax Francais" 4 pages including 9 photos and 2 drawings. "Arsenal VG-33" 2 pages on building the Replica kit.

GERMANY

MITTEILUNGEN (IPMS Germany, Bergengruenstrass 5-7, D-1000 Berlin 38; 12 issues DM 60.00 Europe, DM 65.00 USA, DM 70.00 Japan, DM 75.00 Australia).
2/90 (30 pages) "FW-58C" 3-page kit report with photo of Bulgarian and Romanian Weihe.
4/90 (28 pages) "Junkers JU-87A-1" one page including 2 side-view drawings (Spanish); "Ausstellung des Technischen Museums Prag in Frankfurt" 4 pages including 7 photos (Czech S.99, CS.199, Avia C-2, Zlin 281, Letov L.290, & Ju 353)."Die Slowakische Luftwaffe" 4 pages including 4 photos (Avia Bk-534, Bf-109E, & Ju-87D).

HUNGARY

AERO HISTORIA (Kozlekedesi Muzeum, Budapest, Varosligeti krt. 11 Levelcim).
Dec. '89 (56 pages) "The Budapest Airlift: Part 3" 4 pages including 2 photos. "The R-14 Pinty" 3 pages including 5 photos of 'HA-MAL', an attractive little sports aircraft. "Stories from the Life of the 2nd Transport Squadron" 18 pages including 7 photos. "Caproni Ca-135" 4 pages of 1.72-scale drawings and detail drawings.

ITALY

AEROFAN (Giogio Apostolo, via Ampere 49, 20131 Milano; 4 issues L 40.000).
#53 (52 pages) "The Regia Aeronautica in the Last Months of War" 12 pages including 20 photos. "The Breda 64" 9 pages including 12 photos of details. "Alaska Airways S-55"7 pages including 8 photos and 3-view drawing.

IL NOTIZIARIO (IPMS Italy, CP 182, 41100 Modena Ferrovia; 4 issues 24,000 Italian Lira in Europe or $18.00 overseas).
3/4-89 (32 pages) "De Havilland D.H.2" 5 pages including 1/72-scale drawings and 6 photos.

JP-4 (JP-4, CP 1550, 50100 Firenze; L 27.000 Europe, L 30.000 elsewhere).
3/90 (98 pages) Color photos: Oman Jaguar & AS-202 Bravo. "Mirage 2000" 9 pages including 10 color photos (Greece & Abu Dhabi). "Combat SAR" 7 pages including 10 color photos of Italian helicopters (HH-3F & AB.212). "Taiwan" 6 pages including11 color photos (F-5, F-104, At-3, C-119, ACH-1, UC-25, & Ching-Kua). "Target Towing Bird Dog" 5 pages including 5 color photos. "Italian Military Gliders" 5 pages including 8 photos.
4/90 (98 pages) Color photos: Swiss Hawk & PC-9; Sweden Saab 340B; Poland Yak-40; & Hungarian An-26. "Defending Peenemunde" 4 pages including 9 color photos (MiG-23 & Mi-8). "Aviation in Hong Kong" 4 pages including 7 color photos (Ecureuil, Dauphin, Slingsby Firefly, Cessna 404, & King Air). "303 Gruppo" 6 pages including 10 color photos (P-166 & C-45). "A SVA Returns" 5 pages including 8 color photos of restored SVA 9.
5/90 (98 pages) Color photo: Egypt DHC-5D Buffalo. "Hornet" 9 pages including 9 color photos (Spain, Canada, Australia).

ROMANIA

MODELISM TEHNIUM (Rompres-filatelia, PO Box 12-201, Bucuresti, Calea Grivitei 64-66, ROMANIA; one year - 4 issues - $10.00.)
4/89 (32 pages) "IAR 80" 12 pages including 7 pages in incredibly detailed drawings and 5 color side-view drawings (aircraft carrying roundel, cross, and star insignia)."Suhoi-27" 6 pages including 4 pages of scale drawings.
1/90 (32 pages) "IAR 90" 9 pages including 4 pages of scale drawings, 2 color photos, and color 3-view drawing. "ICAR-1" 3 pages including 2 pages of scale drawings of primary glider. "F-117A" 3 pages including 2 pages of scale drawings.

SWEDEN

KONTAKT (Kontaktgruppen, Box 4015, S-422 04 Hisings Backa; 5 issues/year)
#97 (28 pages) "Sk 7 - The first Moth of the RSwAF" 5 pages including 5 photos and 5-view drawing. "Israeli Mustangs" 7 pages including 6 photos. "The Israeli AF Museum 1990" 4 pages including 6 photos and list. List of RSwAF TP 101s. Photos: J 35H, Sk 15, TP 101, as well as SA BUlldog prototype and MFI-15 in RSwAF markings.

SWITZERLAND

VIRUS PLASTICUS (IPMS-Switzerland, c/o Mathias Weichelt, Zelgstrass 27, 3027 Bern; 4 issues 35 SFr)
1/90 (32 pages) "Piaggio P-149D" 9 pages including kit review, 3 photos, 3-view drawing, & individual aircraft histories of the Swiss machines. "Do-27" 4 pages including kit review, one photo, & 3-view drawing of aircraft in Swiss AF marking.

USA

WWI AERO (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues $ 20.00).
#128 May '90 (122 pages) "The Wright Stuff" 16 pages including 16 photos and 4 3-view drawings of Wright gliders. "The London-Manchester Race" 7 pages including 7 photos and 3-view drawing (Framan Biplane). "Albatros D.VA" 23 pages including 62 photos and 4 pages of scale drawings. "LePere LUSAC-11" 3 pages including 5 photos and 3-view drawing. "Cockpits/Instruments" 11 pages including 14 photos. "Engines" 2 pages on OX5. "Drawings" 8 pages (Be-2C & Snipe).

SKYWAYS (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues $20.00).
#14 April '90 (84 pages) "A Tale of Two Condors" 17 pages including 27 photos. "Comper Streak" 4 pages including scale 3-view drawings and 2 pages of detail drawings. "The Magnificent Dream" 6 pages including 6 photos and 3 pages of drawings of Ca-60. "Fokker Netherlands Revisited" 8 pages with 18 photos. "Skyways Gallery" 6 pages with 17 photos (Brazil S.55 & Amiot 122). "Yackey Transport" 2 pages including 2 photos. "Cockpits: Curtiss B-20 Condor" 3 pages with 4 photos. "Waco ATO" 3 pages of scale drawings.

PRI-FLY (IPMS Washington DC, c/o Carol Fleckenstein, 13816 Choptank Ct., Centreville, VA 22020; 4 issues $7.00 for US, $8.00 all others).
#75 (16 pages) "Flagon" 2-page review of Pioneer kit. "Open Cockpits" Martin MB-2 & Boeing FB-5.

PACIFIC MODELEER (USA $7.00, others $8.00 from IPMS-Hawaii, PO Box 1941, Pearl City, HI.
#29 (20 pages) Entire issue devoted to building a diorama of the Sikorsky S-38 including 21 photos and 3 side-view drawings.

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TOO YOUNG TO DIE, Brian Cox, Iowa State University Press, *Ames,Iowa, 1989, 290 pages, $12.95
"Someone once wrote that we see not with our eyes, but with our prejudices. While it is natural for each nation to have an essentially ethnocentric view of its own history, it is valuable for both history buff and historian to learn about events from a different perspective.
Bryan Cox in his book, TOO YOUNG TO DIE, relates his experiences as a pilot in the Royal New Zealand Air Force during World War II and in occupied Japan. Cox's book is so well written that one tends to overlook the incredible amount of detail and research which obviously went into the book. For the small-air-force historian, this book is a true find, as not only does it accurately and in great detail report the activities and contributions of a relatively small Allied air force, but it is filled with clear and well printed photographs of US and British aircraft in use by the Royal New Zealand Air Force and the Royal Australian Air Force and Navy. The photos are of Tiger Moths, Harvards, Vickers Vincents, P-40s, F4U-1s, and FG-1Ds, all of which Cox flew, as well as PBY Catalinas, Hudsons, Cessna Cranes, Avro Ansons, and Lockheed Electras, Airspeed Oxfords, as well as Mustangs, P-61s, and a variety of Japanese aircraft and the later Spitfire 'marks' and the earlier British jets. There are also, at the end of the book, some of the mind-bending photos of row upon row of Corsairs and other aircraft about to be bulldozed and burned in a post-war inferno of innocence, idealism, and plenty.
Included in the early chapters are the details of the deaths in aerial combat and accident of Cox's three cousins and of his bother's loss in a Lancaster over Germany in 1944. These deaths starkly reveal the cost of war, not only in a universal sense, but also as it affects a single family from a small and distant nation caught in the whirlwind of war and empire both in Europe and the Pacific.
TOO YOUNG TO DIE is rich in both human and technical detail and offers enough information about flying and piloting that the reader would almost feel comfortable in the cockpit of a Corsair or Kittyhawk. While Cox's story is uniquely personal, it is also, in a larger sense, a story shared. Cox was obviously a very good, and often very lucky, pilot and, while he is clearly his own person, he was in many way, an everyman.
This is an exceptionally well-written book about one of the small air forces of World War II as well as about flying, aviation, war, and one man's courage, experiences, and growth.
Thomas Wm. McGarry (SAFCH #950), 1173 Island Dr., Alameda, CA 84501.

POLAND AND THE BALTIC REPUBLICS, Tarnstrom. 175 pages, 40 maps, and 27 photos. Hardbound. Trogen Books, Route 1, Box 2, Lindsborg, KS 67456. $19.95.

This is the second book in SAFCH-member Ron Tarnstrom's ambitious series 50 CENTURIES OF WARFARE. Ron writes: "Although in the same format as GERMANY STRIKES, this second title is improved in several ways. The printer has done a much better job in the printing quality. There are now two color plates and they present 20 uniforms, plus 20 emblems (flags and aircraft insignia) in color. Specifications for the book include: 175 pages (8.4 in. by 11 in.), 40 uniforms and emblems in full color, 27 photographs, 40 maps, 53 orders of battle, 17 tables of organization and equipment, 282 drawings and specification of weapons (128 warplanes, 28 warships, 60 AFVs, 36 artillery pieces, 32 infantry weapons). Special features include sections on the Polish-Ukrainian and Russo-Polish Wars of 1918-20 and a continuation of the account of World War II Polish participation to include the operations in France (1940), Britain (1940-3), North Africa (1941), Italy (1943-5), Northwest Europe (1944-5) and the Eastern Front (1944-5). The important part played by Latvia in the Russian Revolution is chronicled, as are the activities of all three Baltic Republics in World War II."
Beginning with pre-history, this book covers the military histories of Poland, Lithuanian, Latvia, and Estonia through medieval times, the turbulent 17th, 18th and 19th centuries, WWI, the Russian Revolution, WWII, the Cold War, right on up to today's headlines. (There's even a map showing the "Hands across the Baltic States" of August 1989.) Military equipment receives equal coverage with military history. Numerous tables list order of battle including the numbers of each type of equipment. The hardware is illustrated with simple, but effective, line drawings and well-reproduced photos. The hard cover and sturdy binding will allow this book to stand up to the hard use you will be giving this indispensable reference.
Ron also writes: "Since several SAFCH members are credited for their contributions and, because the organization as a whole has provided much help, I am again extending a 10% discount to SAFCH members." SAFCH members should send $17.95 along with their SAFCH number directly to Ron. Foreign orders require an additional $1.00 for postage, and all payment should be made in American dollars. Please send the correct amount so Ron does not have to bother with credit slips. The next two titles in the series, SCANDINAVIA and FRENCH ARMS 1920-1990, are already in preparation.

PARNALL AIRCRAFT SINCE 1914, Wixey. 240 pages, 210 photos, 11 GA drawings. Putnam Aeronautical Books (1990) £24.00.

Who could resist an aviation book that begins: "In the year 1337 a dukedom was created for Edward the Black Prince."? You know you're in for aviation history as only the English can write it.

The publisher's announcement describes it best: "The Parnall companies entered aviation when the Admiralty asked Parnall & Sons Ltd to manufacture and recondition RNAS aeroplanes. This work involved Avro, Fairey, Short and Sopwith types and led to Parnall designing and building its own naval aircraft and a long association between Parnall, the Admiralty, Air Ministry and British Aviation industry. The author traces in great detail the history and development of the Parnall concerns from early in the 19th century and their involvement in aircraft work up to the mid-1960s. Most Parnall aeroplanes have been long forgotten but Kenneth Wixey brings to life a whole range of interesting types including the one-off Scout or Zepp-Chaser, the Panther naval two-seater with folding fuselage, the Puffin amphibious fighter, Plover carrier-borne fighter, Possum triplane mailplane, Pixie light aeroplane, the submarine-borne Peto, the naval reconnaissance Pike, the Pipit shipboard fighter and many others. Appendices list the individual Parnall-built aircraft; the disposition of Parnall-built aircraft on Navy duty in 1918; and surviving Parnall products."

The first 68 pages of this slim volume discusses the history of the Parnall companies, including a fascinating description of damage done to the factory by German bombs in 1941. The next 17 pages describes the aircraft built under contract between 1914-18. On page 85, the book settles down into the familiar Putnam style of devoting a section to each Parnall-designed aircraft with an informative text, photos, and general arrangement drawings. Aircraft shown in drawings are the Zepp Chaser, Panther, Plover, Pixie (2), Peto, Imp, Pipit, Elf, and Heck (2). Sadly missing is a drawing of the unusual Prawn, a flying boat with a tiltable engine in the nose.

The quality of the book is up the usual high standards expected of Putnam; excellent photo reproduction, good paper, sturdy binding, etc. One suspects that Putnam planned a much longer book since the publisher's announcement mentions 384 pages, 250 photos, and 30 GA drawings. However, how they could have come up with an additional 19 Parnall aircraft for the drawings is beyond my imagination.

FLUGZEUGE UND HUBSCHRAUBER DER NVA, Vol. 1, 1971-89, Kopenhagen. Hardbound. (Available from SAFCH.)

"This book describes the East German Air Force since 1971. The 1956-70 period was described in Vol. 1 (see review in SAFO #520). The first part of this volume describes describes such things as rocket-assisted takeoffs, braking parachutes, flight simulators, anti-submarine operations, etc. The second part describes individual aircraft types, with each type receiving three pages of text, about four photos, a color 3-view drawing, and a cutaway view. The following aircraft are described: L-39ZO, L-39V, KT-04, Z-43, L-410, An-26, Tu-134, Tu-134A, MiG-17F (ground attack), MiG-21M, MiG-21MF, MiG-21bis, MiG-21UM/USM, MiG-23MF, MiG-23ML, MiG-23UB, MiG-23BN, MiG-29, Su-22, Su-22U, Mi-2, Mi-8TB, Mi-14PL, Mi-14BT, and Mi24D. An appendix contains technical data for all aircraft described."

Daniel Petz (SAFCH #623), Na Ladvi 21, 182 00 Praha 8, CZECHOSLOVAKIA.

ILUSTROVANA HISTORIE LETECTVI: TRIADA #6. 20.5 cm by 14.5 cm, softbound. (Available from SAFCH.)

"This latest of the 'Triada' publications describes the Ilyushin Il-2, Junkers J-1, and A-10 Thunderbolt II. Most interesting is undoubtedly the Il-2 section which includes drawings of 32 Russian, 7 Czech (2 post war), 3 Polish (2 post war), and one post-war Yugoslav aircraft. The section on the Junker J-1 includes drawings of 6 German aircraft, and the section on the A-10 includes 14 USAF schemes. Scale drawings, sketches of details, and photos are present the the high quantity usual for this series."

Daniel Petz (SAFCH #623), Na Ladvi 21, 182 00 Praha 8, CZECHOSLOVAKIA.

INDEX TO MODEL PERIODICALS 1988, Cardwell. 242 pages. Hippogriff Publications, 111 W. 5th, Bonham, TX 75418. $8.50 plus $1.25 postage for North America, $2.25 postage elsewhere.

With the publication of the 1988 edition of this monumental work, SAFCH member Paul Cardwell has almost brought his series up to date. (Paul says the 1989 edition is in production.) Earlier editions have been reviewed in SAFO, but for those not familiar with this work, Paul indexes 59 modeling publication from around the world and cross-references the material into 6 major categories: Static Scale, Operating Scale, Color Patterns, Non-Scale Models, Articles, and Reviews.

The best way of getting an appreciation of the content, short of seeing the book, is to review one small portion: Under "Color Pattern, Aircraft, Color Schemes, Post World War II, Cuba", we have: "Aero L-39 Albatross: 1982: SAFO O 88 48:99; Beech T-34A Mentor: 1966: AN 5 Ag 88 17/6:265; Curtiss C-46R: 1958: SAFO Ja 88 12/1:30; Douglas C-47A/B (or R4D-5/6): 1958: SAFO Ja 88 12/1:30; Hawker Sea Fury: MBH O 88 19/10:19; MiG-17 Fresco A: early 1970s: AN 13 My 88 16/26:1192; North American AT-6: Military Air School, 1960-61: SAFO Jl 88 47:90." Pretty complete stuff! You should be able to figure all this out except maybe: AN = Aviation News and MBH = Modell Bau Heute.

THE INDEX TO MODEL PERIODICALS is invaluable to have around, and every modeling club should have one available for use by its members.

"A couple of books that may interest SAFO readers are 'Osprey Men-at-Arms' #209 **'The War in Cambodia 1970-75'** and #217 **'The War in Laos 1960-75'**. These give a complete history of the wars, as well as several photos of aircraft. The Cambodian book has photos of Khmer T-37 (very rare), AC-47 and T-28, plus a color side-view of a UH-1B, while the Lao book has photos of Lao T-28 and a very interesting shot of a UH-1C flown by Thai 'volunteers' in Laos in 1972, plus b/w side-views of a Lao T-28 and an Air America Pilatus (this latter of doubtful accuracy). Both books also give details of air force uniforms, brief histories of each air force plus order-of-battle, information on armoured forces, and (Cambodia only) naval forces. Good value at about £5 each (in Britain)."

John MacGregor (SAFCH #706), 13 Foggyley Gardens, Dundee, DD2 3LG, SCOTLAND.

"The **J26 MUSTANG** by Leif Hellstrom is a rare treat from Sweden. Flying with the RSwAF for almost ten years as a fighter, a recce platform, a trainer, and a communications aircraft, the Mustang gained a considerable following in Sweden. There are well over 200 b&w photos, more than 30 color photos, and 12 color profiles mixed with the detailed text. Everything is printed on fine art paper. Captions are in both English and Swedish. An excellent reference for Mustang chasers. 256 pages, hardcover, $16.95 plus $2.00 for postage."

Aerofax, PO Box 200006, Arlington, TX 76006.

[Editor's note: SAFCH members Hellstrom's book is great, and SAFCH member Jay Miller is offering it at a great price. Don't let this one slip through your fingers.]

LA ULTIMATE CRUZADA, A WARGAMER'S GUIDE TO THE SPANISH CIVIL WAR; 1989, 72 pages, drawings, diagrams, maps, tables, descriptions of uniforms, 1936 order of battle, £5.45.

!ARRIBA ESPANA! SPANISH CIVIL WAR WARGAMES RULES FOR 1:200th, 1:300th, and 20mm SCALE; 1989, 44 pages plus 4 page playsheet, AFV drawings, ground-unit organizational charts, tables, £3.50.

"Both these booklets, by Bob Cordery, are useful to aviation enthusiasts interested in the Spanish Civil War even though they may not be particularly interested in wargames. LA ULTIMA CRUZADA provides a wealth of information in English on the order of battles in July 1936 and foreign interventions which subsequently tipped the balance. There are brief sections on the various political parties, unit organizations of military forces, the uniforms and insigneas which they wore, and the weapons which they used. This booklet is not as useful as it could have been if changes had been better noted: e.g. the Legion Condor is described as having 3 bomber squadrons although, in the Spring of 1937, an experimental one was added. Similarly, the Lincoln Battalion is only indentified as the 17th of the 15th I.B. although it later became the 58th Bn. of the 15th I.B.

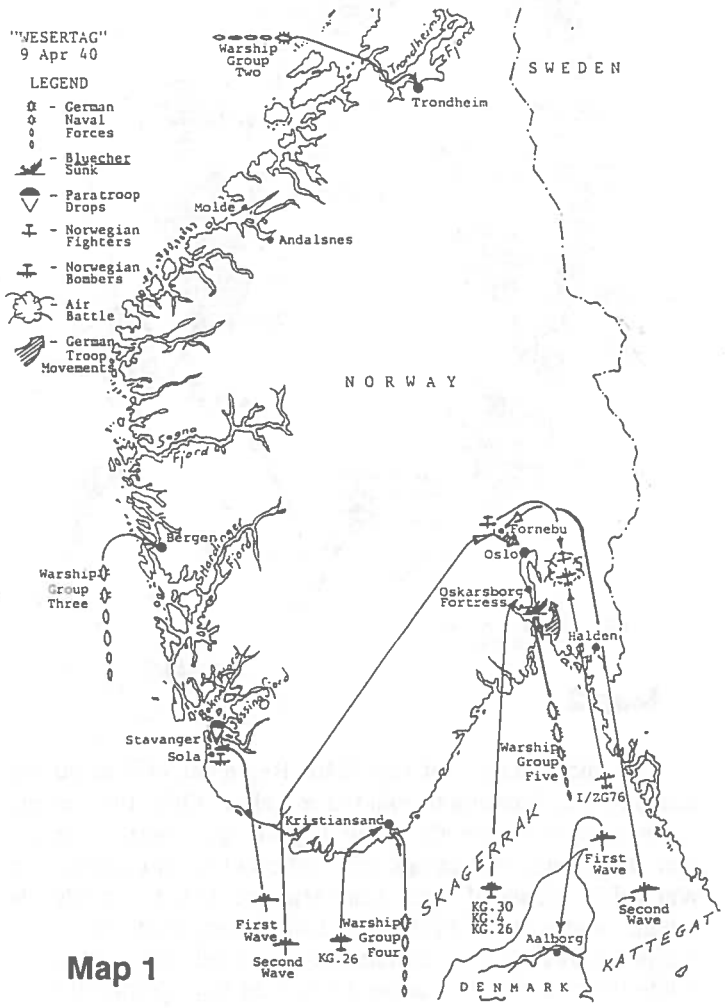
!ARRIBA ESPANA! is less useful to non-wargamers although it does include interesting tables on air superiority, air support, and air attack which supplement those on artillery, infantry, armor and political cooperation between the various factions. Both of these booklets are recommended to those who wish to get an idea of the relative military strengths on both sides and the complexity of the politics involved without digging through libraries full of books in foreign languages. However, they should be taken as useful overviews of a convoluted subject and not as definitive works. These booklets are available from Partizan Press, #26 Cliffsea Grove, Leigh on Sea, Essex, SS9 1NQ, England."

Tom Sarbaugh (SAFCH #497), #266 Lake Drive, Kensington, CA 94708-1132.

OPERATION WESERTAG

THE GERMAN INVASION OF NORWAY

Unlike the Danish *Haerens Flyvertropper*, the Norwegian *Haerens Flyvevaaben* was thoroughly alerted that Operation Weseruebung was underway (Map 1). Just after midnight of "Wesertag" (Weser Day; Tuesday 9 April 1940), the *Kriegsmarine's* Warship Group Five, consisting of the brand-new heavy cruiser Bluecher, pocket battleship Luetzow, light cruiser Emden, three torpedo boats (small destroyers Albatross, Kondor and Moewe) and eight motor minesweepers (called R-boats), entered the mouth of Oslofjord (2:106). The group was



Map 1

sighted and challenged by the Norwegian navy patrol boat Pol III which raised an alarm before the torpedo boat Albatross sank it with machine gun fire (2:108). The German warships sailed past the fjord's outer defenses amidst a thick fog which prevented specific targeting. Nevertheless, these forts also relayed the alarm that heavy warships were passing, headed for Oslo (18:64). At about 0520 (local time), the Bluecher nonchalantly tried to sail past the ancient Oskarsborg fortress of the fjord's inner defenses. When the brand-new heavy cruiser came abreast of the fort, the Norwegians unleashed their three 280 millimeter (11 inch) guns and two underwater torpedo tubes. The German cruiser was shattered by repeated hits from the heavy shells fired at almost point-blank range, holed by two torpedoes, and wracked by tremendous internal explosions. The Luetzow, also hit and damaged, immediately reversed course, taking the rest of the squadron and what remained of the 163rd Infantry Division back to the south and to safety (18:65).

Similarly, the airborne assault on Oslo was turned back, but by the intimidating weather rather than by the Norwegian defenders. The first wave, 29 Ju.52 "Iron Annies" of II/KGzbV.1 carrying over 300 paratroopers, encountered thick fog over the Skagerrak. In the fog two of the trimotor transports collided, crashing into the sea with the loss of all aboard. The section leader reported the disappearance of his two wingmen to the formation commander, Oberstleutnant Martin Drewes. Drewes, fearing the loss of even more of his formation, aborted the attack and diverted his 27 remaining airplanes to the freshly captured Danish airfield of Aalborg (4:47)

The only force arriving on time over southern Norway was the *gruppen* of He.111s from KG.26 whose mission was the psychological intimidation of the Norwegian government and the people of Oslo (6:109). At Fornebu airfield, the actual objective of the airborne operation, the commander of the *Jagerving*, Captain Erling Munthe-Dahl received frantic calls that German bombers were roaring over the capital and surrounding cities. He immediately ordered his entire command into the air (12:325).

Seven Gladiators scrambled (two were grounded due to maintenance problems) (8:134). Led by Lt R. T. Tradin, a section of five of the biplane fighters found and dove into the formation of 36 twin-engine bombers. Lt Tradin claimed the first Norwegian "kill" of the war, followed by Lt Per Waaler, and two more were claimed by Lt Dag Krohn. Lt Per Schye attacked and brought down a Do.17 (probably a reconnaissance aircraft) before he was beset upon by the Bf.110s of I/ZG.76. He was wounded and his Gladiator riddled, forcing him to crash-land (mostly crash) north of Oslo (12:326).

After dispersing the Norwegian Gladiators, the eight Bf.110s, commanded by *Oberleutnant* Hansen proceeded on to Fornebu to complete their mission of strafing the field and suppressing the Norwegian anti-aircraft guns there (17:80). They caught a pair of Gladiators, rearming and refueling from their scrape with the Heinkels, in the open and destroyed them outright (12:327).

Captain Munthe-Dahl immediately radioed that Fornebu was under attack and for the remaining Gladiators to land "anywhere but there" (12:326). Two of the remainder (Lt Tradin and Lt Krohn) landed on the frozen Steins Fjord at Aasa and a third on the frozen Lake Bogstad. But in the latter case the ice proved too thin and the aircraft was lost. The last Gladiator ran out of fuel and made a forced landing on the frozen lake at Oyeren and had to be abandoned there (8:134).

Meanwhile, back at the *Jagerving's* original base, the Bf.110s were dutifully preparing the paratroop drop zone. However, to their surprise and consternation, there were no

paratroopers. The second wave of Ju.52s (of KGrzbV.103) had arrived, but they were loaded with infantrymen untrained and unequipped for a parachute jump. In an attempt to land the infantry troops the leading Ju.52 was driven away by Norwegian ground fire, killing the formation commander aboard the aircraft (4:49).

By this time the Bf.110s were critically low on fuel. Taking the initiative, Lt Hansen ordered his squadron to land. Lt Helmut Lent was the first down, crash landing and jumping from the collapsed airplane with his gunner and their rear machine gun. While they opened fire on the defenders and while the other four Messerschmitts strafed the anti-aircraft emplacements, Lt Hansen also landed. In a few moments the entire squadron was safely on the ground, the Norwegian AA guns, having destroyed three German aircraft and damaged another five (7:36) had either all jammed or been abandoned (4:49).

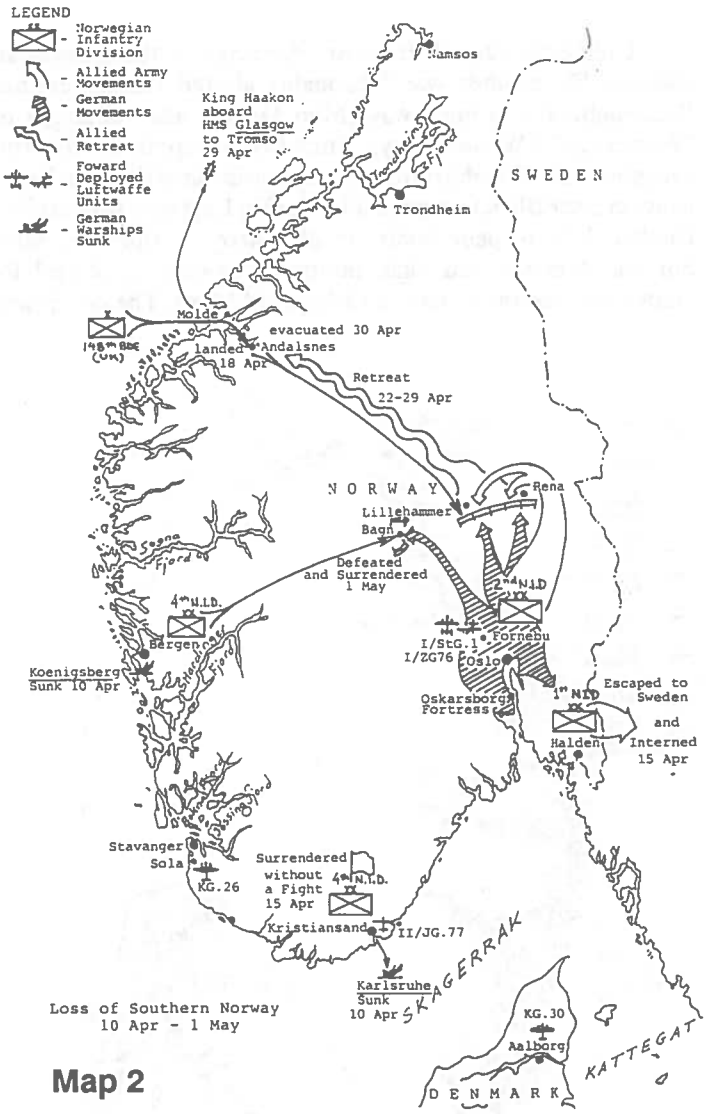
In the midst of the battle, the first Ju.52 was finally safely landed. Within a short time the "Iron Annies" were all on the ground disgorging their heavily armed infantry; complete with a small brass band. The 27 Ju.52s filled with paratroopers (having been refueled at Aalborg) arrived soon afterwards as well as some reinforcements that were originally intended for Stavanger/Sola. This burgeoning force, totaling eight companies strong by noon, now led by the German air attache to Oslo, Captain Eberhard Spiller, formed up into units as if on parade and marched from the airfield into the capital and captured it! (18:68).

At 0800, word of the invasion arrived at Stavanger/Solaand and the aircraft based there were ordered to fly eastward (7:40). The fledgling light bomber flight scrambled to get airborne and escape. Three serviceable Ca.310s took flight, but the curse of underpowered and unreliable engines resulted in one crashlanding shortly after takeoff. It and 507 (undamaged in the subsequent Luftwaffe attack) were captured while the other two were forced to make emergency landings further north (3:45).

The German assault on the large airfield was a classic example of meticulous planning and flawless execution. Twelve Ju.52s were launched carrying a company of paratroopers. North of Denmark they entered the same thick fog that plagued the other formations. One "Tante Ju" pilot became disoriented and turned back to the south. The other eleven emerged unscathed and crossed the craggy coastline at low altitude in order to escape detection. At 0845 -- right on schedule -- they approached the airfield from the southeast, and climbed to 400 feet. One hundred twenty *Fallschrimspringer* jumped from the opened doors. As they descended upon the airfield a pair of Bf.110s (of six overhead) dived to strafe the two Norwegian concrete machine- gun emplacements, destroying two *Haerens Flyvevaaben* aircraft on the ground as they did so (7:40). Once on the ground, the airborne storm troopers quickly secured the base and dispatched a platoon to capture the nearby naval and seaplane base at Harfsfjord (4:46).

Like the Army's Ca.310s, two of the three He.115As based at Harfsfjord made their escape before the invaders arrived. One flew north to join the *3. Flyavdeling*. The other headed westward to Scotland. The third was captured by the Germans (9:154).

Overall, the capture and occupation of Stavanger went smoothly; so much so that *Fliegerkorps X* headquarters diverted the next wave of Ju.52s (carrying a battalion of the 324th Infantry Regiment) to Fornebu to make up for the initial lack of the paratroop battalion and to help consolidate what, at that time, was only a toe-hold (14:100). Still, during the first day of operations as a Luftwaffe airfield, Sola received over 180 aircraft (7:40) bringing in troops and equipment, Luftwaffe air base personnel, and over 45,000 gallons of aviation fuel (14:95).



Map 2

As the battalion of the 324th Regiment off-loaded and formed-up at Fornebu to join the march on Oslo, the German bombers were completing their psychological-warfare passes over the capital. But things went different from Copenhagen. Warned in plenty of time, King Haakon VII, his family, the cabinet, and some of Parliament had already made good their escape by the time the Germans ceremoniously entered the city. While the city fell, the nation did not. In fact, despite the "assumption" of power by Vidkun Quisling that afternoon, King Haakon was soon on the radio announcing that he had refused the German ultimatum to capitulate and that "resistance will continue as long as possible." (18:76)

Meanwhile, the bombers of *Fliegerkorps X* were back over southern Norway with a vengeance. Beginning at 0800 hours the Ju.88s of KG.30 were over the fortress at Oskarsborg raining high explosives upon the defenders (12:325). They were followed by He.111s of KG.4 and KG.26 which, along with those of KGr.100, bombed the forts in the Oslofjord, as well as anti-aircraft gun emplacements at Holmenkollen and the Oslo-Kjeller airfield

(5:178). In the last, the four brand-new Hawk 75A-6s were destroyed at the Kjeller factory (20:48).

The Ju.52s returned as well, shuttling men and equipment and aviation fuel into Fornebu as well as landing troops at Oslo-Kjeller, capturing the airfield (23:16) and reinforcing the surviving battalion of the 163rd Division that the German Navy had put ashore at Sons-Bukten, 30 miles south of their objective (2:112).

The Stukas of I/StG.1 and the Bf.110s of I/ZG.76 deployed into Fornebu that afternoon (23:16). Enroute, the 22 Ju.87s pounded the now-famous Oskarsborg fortress and its sister fort Akerhus in Oslofjord (19:72). By the end of the day Fornebu and Sola, and the smaller Kjeller airfield as well, joined Aalborg as important staging bases for the subsequent phases of the invasion.

Elsewhere on "Wesertag" the seaborne landings also went well; except at Kristiansand, an important port on the southern coast of Norway between Stavanger and Oslo. There, Warship Group Four, consisting of the light cruiser Karlsruhe, a submarine depot ship and three torpedo boats carrying a battalion of the 310th Infantry Regiment (1:84), attempted to force its way into the harbor on four occasions. Finally the naval commander called for air support to bomb the coastal batteries. A *gruppe* of KG.26 answered the call, silencing the Norwegian defenders, and the *Kriegsmarine* completed another landing unopposed (18:63).

Finally, at Steins Fjord the two remaining Norwegian Gladiators, piloted by Lt Dag Krohn (in 421) and Lt Tradin, were refueled. With the Luftwaffe in possession of their home field and in total mastery of the air over Oslo, this remnant of the *Jagerving* elected to retire further north to regroup with the other, very few, surviving elements of the *Haerens Flyvevaaben*. Late that afternoon, the pair flew on to Lake Mjosa. There, disappointingly, upon landing the wheels of one broke through the ice, causing the loss of that plane. Thus, by the end of "Wesertag" the Norwegian fighter force was reduced to one solitary aircraft (8:131, 134).

THE REST OF WESERUEBUNG

Action continued apace the following day. As men and materiel poured into the captured Norwegian ports, Trondheim/Vaernes airfield fell to yet another Ju.52-borne air landing (11:34). However, the capture of this airfield nor the forward deployment of Bf.109s of II/JG.77 to Kristiansand (23:16) could prevent Royal Navy Blackburn Skuas (dive-bombers) of 803 Squadron from sinking the German light cruiser Koenigsberg at its berth in Bergen harbor (19:66).

Her sister ship, the Karlsruhe, was also sunk on 10 April (by the British submarine HMS Truant) as she sailed home from her successful capture of Kristiansand (2:117). The Royal Norwegian Navy also got in a measure of retribution the same day when the minelayer Olav-Tryggvason sank the torpedo boat Albatross; payback for the loss of the Pol-III the previous morning (10:85). Elsewhere the *Marinens Flyvevaaben* recovered from its initial shock to conduct sporadic and ineffectual bombing attacks with its few remaining Hover M.F.11s against German naval units (22:182).

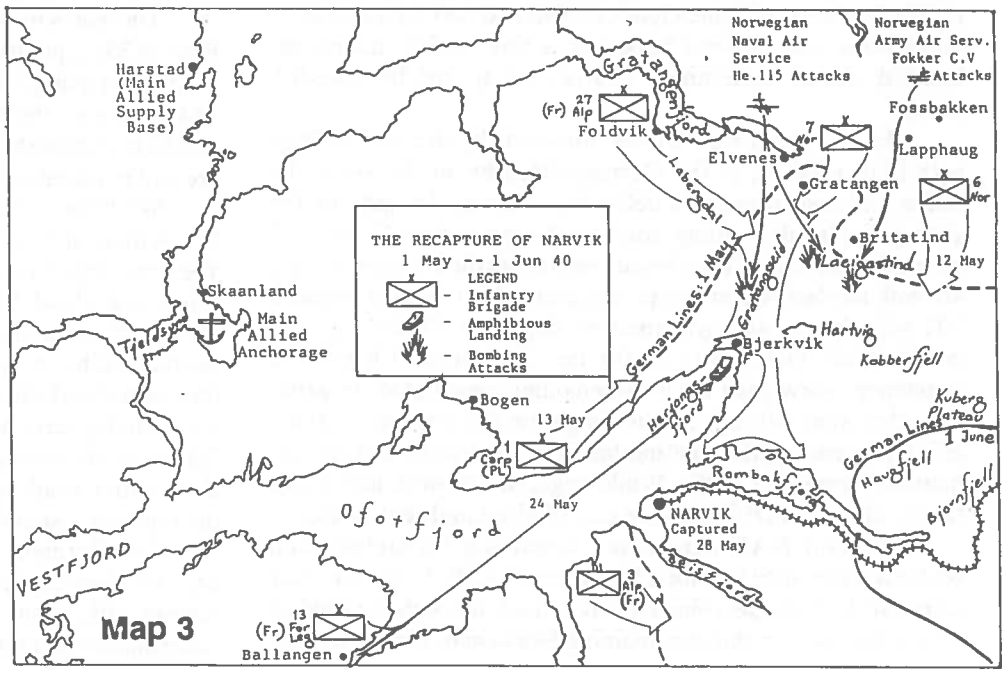
In the north, at Narvik, where the seaborne invasion had gone without a hitch the day before, the tables were suddenly turned. A British destroyer squadron steamed into the narrow confines of the fjord and, taking the much superior German squadron by surprise, sank two destroyers and seven merchant and supply ships and damaged another five destroyers (18:90).

On land, however, the events were not nearly so promising. The Norwegian army, in the midst of mobilization along the entire length of the country, had organized a hasty defense north of Oslo along the line Lillehammer to Rena (see Map 2) attempting to block the Germans from proceeding northward. The German army quickly and efficiently consolidated its hold on Oslo, Kristiansand, Stavanger and Bergen before pushing northward to join-up with the 138th Mountain Regiment at Trondheim. Having eliminated the Norwegian 1st and 4th Divisions at their flanks, the Germans drove northward beginning on April 14th (18:79).

Within a week the Wehrmacht made contact with the stoutest Norwegian defenses and, with armor and continuous air support, began pushing the more lightly armed defenders back (18:80). Even after being reinforced by Allied troops (the British 148th Brigade) landed at Andalsnes on April 18th, they could not halt the German onslaught (18:86).

Retreating back to where the Allies had disembarked, the defenders held long enough for King Haakon VII, his family, and members of his government to be evacuated from the burning quay at Molde by the cruiser HMS Glasgow on the evening of 29 April (18:88, 89). The British and French troops embarked from Andalsnes the following day and on the 1st of May the Norwegian defenders that remained surrendered (18:89).

King Haakon landed again at Tromso, north of Narvik, to continue his defensive battle. By this time the British had finished off the battered German destroyer squadron and had landed the British 24th Guards Brigade and the French 27th "Chassuer Alpin" Demi-Brigade at Harstad (1:96). They began



aiding the two Norwegian brigades (6th and 7th) which were pushing down on the German perimeter from the north (Map 3).

With the collapse of resistance in southern Norway, however, the Luftwaffe was now free to deploy even further northward, basing as many as 200 bombers at Trondheim/Vaernes (7:200). As a result, the Allied main supply base at Harstad and the fleet's anchorage at Skaanland underwent 140 air raids in the eight weeks of operations in northern Norway (7:150). Even with a squadron each of RAF Gladiators (263 Sqdn) and Hurricanes (46 Sqdn), the Allies did not have air superiority (11:34).

Still, the Allies were not totally bereft of air support. On May 12th British Fleet Air Arm Blackburn Skuas from HMS Ark Royal flew in support of the Royal Navy's landing of the French 13th Foreign Legion Demi-Brigade at Bjerkvik, across the fjord from the town of Narvik (7:198). Meanwhile, the surviving Fokker C.Vs attached to the 6th Norwegian Infantry Division were in action bombing German positions between Britatind and Laeigstind (21:150). These attacks, "by miscellaneous aircraft," were in support of the Norwegian 6th Brigade's revitalized push from the north against the Kobberfjell ridge and the Kuberg plateau (7:197).

Operating from water bases, the *3. Flyavdeling* of the *Marinens Flyvevaaben* was in action continuously. In addition to the "reinforcing" He.115A from the 2nd Flight (making 4 He.115As total), Norwegian forces had captured two German He.115Bs of 1 Staffel/Ku.Fl.Gr.506, complete with bombs and ammunition. They had landed at Bronnoysund and Ornes, near Bodo, their crews undoubtedly believing that these areas were already secured by German troops (9:154).

These six He.115s were also involved in the offensive against the now-surrounded German 3rd Mountain Division. They were in action continuously, bombing the German positions north of Laeigastind and Gratangseidet in support of the Norwegian 7th Brigade and the French 27th Demi-Brigade which were pushing south to meet the Foreign Legion troops landed at Bjerkvik (9:154).

Allied successes continued, albeit slowly, and on May 28th Narvik was taken by the Norwegians and Foreign Legion troops (1:96). By the 1st of June, General Dietl and his German mountain troops were pushed back into a tiny pocket, utterly exhausted, out of ammunition and pinned against the Swedish border.

Unfortunately for Norway, however, by the end of May, with France falling to the German offensive in the West, the Allies had lost interest in defending Norway. In spite of the victory at Narvik, holding northern Norway while France fell seemed superfluous. They began evacuating their forces on June 4th with the last Allied troops departing the 7th. King Haakon VII with family and government, departed Tromso on the cruiser HMS Devonshire on the last day. General Ruge, the remaining Norwegian army commander, negotiated an armistice that went into effect at midnight on the 9th/10th of June, effectively ending the fighting between his troops and the exhausted Germans (7:219). While negotiations were underway, troops of the 6th Division were demobilized and sent home.

The two RAF squadrons departing Bardufoss had destroyed the airfield with 120 craters (7:220). However, they were careful to leave a single narrow track through the field of craters for the handful of remaining Norwegian Army Air Service airplanes also there. The half dozen or so "miscellaneous aircraft", Fokker C.Vs and deHavilland Tiger Moths, were subsequently flown to neutral Finland. The Norwegian navy was ordered to sail its remaining vessels and long-ranged aircraft to Great Britain (7:219).

While three surviving M.F.11s escaped to nearby Finland (22:182), the longer-ranged He.115s attempted to evacuate across the Norwegian Sea to Scotland. By this date, however, one of the He.115Bs was no longer airworthy and had been cannibalized for parts. A second machine, an He.115A, was barely airworthy and unable to fly across the seas. It was flown to Finland where it was inducted by the *Ilmavoimat* into the service of the LeLv.15 (9:154).

Of the four remaining He.115s, three succeeded in making it to Scotland joining the He.115A that had escaped on the first day of Weseruebung. The fourth, an He.115A, ran out of fuel just short of its destination, landed on the sea and was sunk by its crew (9:154).

POSTSCRIPT

Sadly, the second part of "Utter Defeat" came to a close. But, like the Danish machines and services, the Norwegian aircraft and air arms continued to live, although in another "existence."

Whereas the Danish air services faded into a twilight existence under Nazi-occupation rule, the Norwegian air arms blossomed in exile. In January 1940, a second order for 36 Curtiss Hawk 75A-8s had been placed (20:48) along with an order for 36 Douglas DB-8A-5s (15:132) and yet another for 24 Northrop N-3PBs (13:13). These were fulfilled by the American companies. These aircraft, which could have been a decisive factor if they had been on-hand in Norway in April, were delivered to the Norwegian flying training center that was established at Island Airport, Toronto, Canada in the summer of 1940 (20:48). The 24 Northrop N-3PBs were organized into 330 Squadron, RAF, and in late May, 1941, were deployed to Iceland where they served with distinction in a seemingly pedestrian role (13:13). Nevertheless, they maintained the highest traditions of the *Marinens Flyvevaaben*.

The *Haerens Flyvevaaben* also became embodied in the RAF as 331 Squadron (established 21 Jul 41) and 332 Squadron (16 Jan 42) flying Spitfire Mk.Vs and IXs from 1942 through the end of the war (16:115). These three squadrons became the basis for the re-establishment of the Royal Norwegian Air Force and are still in extant today.

While the men and the spirit of the *Flyvevaabens* went with the Allies, not so with Norwegian aircraft that survived Weseruebung. Most of the few remaining airplanes evacuated safely to Finland. However, the Germans did find eight Hawk 75A-6s in their crates in a warehouse in Oslo harbor. These were overhauled by the *Espenlaub Flugzeugbau* at Wuppertal where they were fitted with German instruments, radios, and gunsights before being turned over (with 14 captured French Hawk 75A-3s) to the *Ilmavoimat*'s HLeLv 32 fighter squadron. They were flown with considerable success in the "Continuation War" until the unit was disbanded in 1944 (20:51).

The Germans also captured at least half a dozen Hover M.F.11 float-biplanes. They found these locally-produced aircraft efficacious enough to supplement their own coastal reconnaissance units and they completed another four from

parts and unfinished components found at the Hover factory. These ten Norwegian airplanes performed coastal patrol duties of their homeland in the hands of the Luftwaffe (22:182).

The four German produced airplanes that were evacuated to Great Britain (one He.115A on April 9th and two He.115As and a captured He.115B on June 8th) also led a curious life. Registered as BV184 through BV187, respectively, in RAF service, at least two of these were modified for clandestine operations (9:154). However, these special missions were discontinued the following year when it became apparent that masquerading as a German aircraft was more dangerous than being an Allied one!

Thus another sad story of utter defeat ends with the echoing of the bitter regret of nations who invested too little too late in defense. Instead they chose to rely vainly on the hope that a greater power would rescue them in their hour of peril. Such lessons as this should not be easily lost -- even half a century after these traumatic and tragic events have ended.

Doug Dildy (SAFCH #844), PSC Box 10162, APO NY, 09012.

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APPENDIX 1

LUFTWAFFE AIR ORDER OF BATTLE FOR OPERATION WESERUEBUNG

Fliegerkorps X - Commander: Lt Gen Hans Geisler

Unit	Strength	Location
I/ZG.	35 Bf.110C-	Barth (3)
I/ZG.76	35 Bf.110C-1	Westerland (3)
II/JG.77	30 Bf.109E-1	Pilsen (?)
I/StG.1	40 Ju.87R-1	Keil-Holtenau(4)
KG.4		Fassberg (5)
(3 Gruppen)		Luenenburg (5)
		Perleburg (5)
KG.26	243 He.111	Lubeck-Blankensee
(3 Gruppen)	(Total)	(2 Gruppen) (5)
		Marx (1 Grp) (5)
KGr.100		Nordholz (5)
KG.30	47 Ju.88	Westerland (1)
(3 Gruppen)		(3 Gruppen)
KGzbV.1	213 Ju.53/3m	(6)
KGzbV.2	(213 Ju.52/3m held in reserve)	(6)
KGrzbV.101	53 Ju.52/3m	(6)
KGrzbV.102	53 Ju.52/3m	(6)
KGrzbV.103	53 Ju.52/3m	(6)
KGrzbV.104	53 Ju.52/3m	(6)
KGrzbV.105	53 Ju.52/3m	(6)
KGrzbV.106	53 Ju.52/3m	(6)
KGrzbV.107	12 Ju.90s/1 G.38/some FW.200s	(6)
KGrzbV.108(See)	22 He.59/some Ju.52/3m Float	(6)
Aufklaerungsgr.22	Hs.126	
Aufklaerungsgr.120	Do.17P	
Aufklaerungsgr.121	Do.17P	
Kuestenfl.Gr.106	He.115B	(7)
Kuestenfl.Gr.506	12 He.115B	(7)

REFERENCES:
1. Units are from: HITLER'S LUFTWAFFE, Wood and Gunston, New York: Crescent Books, 1977; pg 15.
2. Strengths from: WAR IN THE AIR, Mason, New York: Crescent Books, 1985; pg 34.
3. "Messerschmitt's Strategic Fighter, Part II", AIR INTERNATIONAL, Vol 30/#6, Jun 86; pg 284.
4. "Stuka: The First Generation", AIR INTERNATIONAL, Vol 27/#4, Oct 84; pg 198.
5. "The Classic Heinkel, Part III", AIR INTERNATIONAL, Vol 33/#4, Oct 87; pg 178.
6. GERMAN AIR FORCE AIRLIFT OPERATIONS, Maj Gen Fritz Morzik, New York: Arno Press, 1968; pgs 92, 93.
7. "Last of a Genus: The He.115, Part II", AIR INTERNATIONAL, Vol 32/#3, Mar 87; pg 154.
?. Only known location, dated Sep 39 (for the Polish campaign)

APPENDIX 2

KNOWN SERIALS OF NORWEGIAN MILITARY AIRCRAFT

NORWEGIAN ARMY AIR SERVICE

Royal Aircraft Factory B.E.2e	"131"	Known SAFO 10/1/5
Hannover CL.V (F.F.7)	"207"	Photo AI 21/5/254
Fokker C.VE	"349"	Known SAFO 9/4/92
	"355"	Profile EAW, pg 74
Hawker Fury	"401"	Photo AI 22/4/207
Svenska Aero (SAAB) J.6	"403"	Profile SAFO 9/2/55
AW Scimitar-	"405"	Known SAFO 4/1/15
	"407"	"
	"409"	"
	"411"	"
Gloster Gladiator	"421"	Photo AI 4/3/131
	"427"	Profile AI 4/1/41
	"	EAW pg 82
	"	WITA pg 35
HB W.29/W.33- (1921-1928)	"501"	Known SAFO 7/2/57
	"503"	"
	"505"	"
	"507"	"
	"509"	"
	"511"	"
	"513"	"
	"515"	"
	"517"	"
	"519"	"
	"521"	"
	"523"	"
	"525"	"
Caproni Ca.310	"501"	Known SAFO 3/2/45
	"503"	Profile EAW, pg 82
	"505"	Profile BBTW, pg 75
	"507"	Known SAFO 3/2/45

NORWEGIAN NAVAL AIR SERVICE

HB W.33 (M.F.8)	"10"	Known SAFO 7/2/26
	"14"*	"
	"16"	"
	"18"*	"
	"20"	"
	"22"	"
	"24"	"
	"26"	"
	"28"	"
	"30"	"
	"32"	"
	"34"*	"
	"36"	"
	"38"	"
	"40"	"
	"48"	"
	"50"	"
	"52"	"
	"54"*	"
	"56"*	"
	"58"*	"
	"60"	"

* Note: these serials used twice

Heinkel He.115A	"58"	Photo AI 32/3/155

SOURCES:
AI = Air International
BBTW = Bombers Between the Wars; 1919 to 1939
EAW = Encyclopedia of Air Warfare
FATA = Fighter, Attack, and Training Aircraft; 1939 to 1945
FC = Flying Colors
SAFO = Small Air Forces Observer
WITA = War in the Air

APPENDIX 3

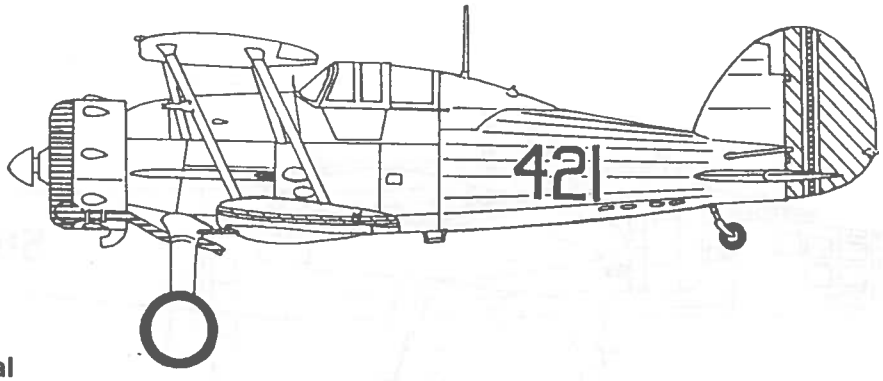
KIT REVIEWS
NORWEGIAN WORLD WAR TWO AIRCRAFT

Type	Kit	Scale	Reviewed in:
Fokker C.VE	Reuver	1/74	none known
	Trucker's Mate	1/72(Vac)	AI Apr 81
Gloster Gladiator	Airfix (Mk.I)	1/72	none known
	Frog (Mk.II)	1/72	none known
	Heller (Mk.II)	1/72	none known
	Matchbox (Mk.I/II)	1/72	none known
	Lindberg 1/48		none known
Heinkel 115	Matchbox 1/72		none known

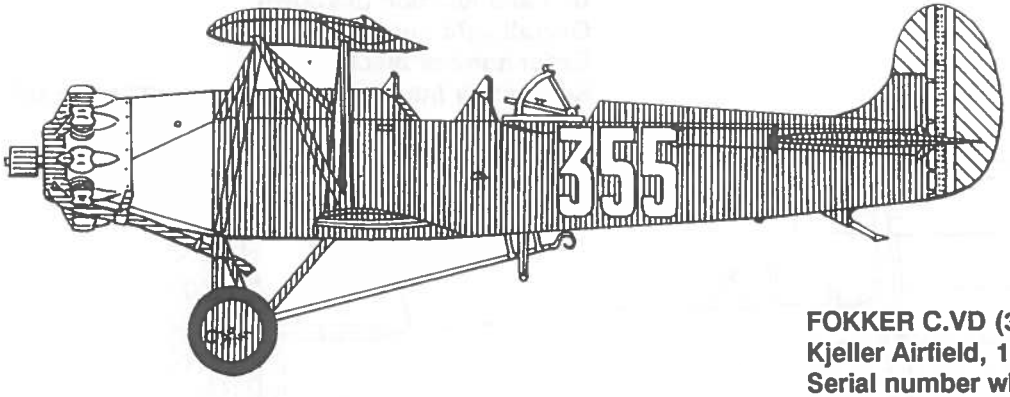
SOURCE:
COLLECTORS VALUE GUIDE FOR SCALE MODEL PLASTIC KITS (REVISED). Burns. Kit Collectors Clearinghouse; 1983.

NORWEGIAN HAERENS FLYVEVAABEN

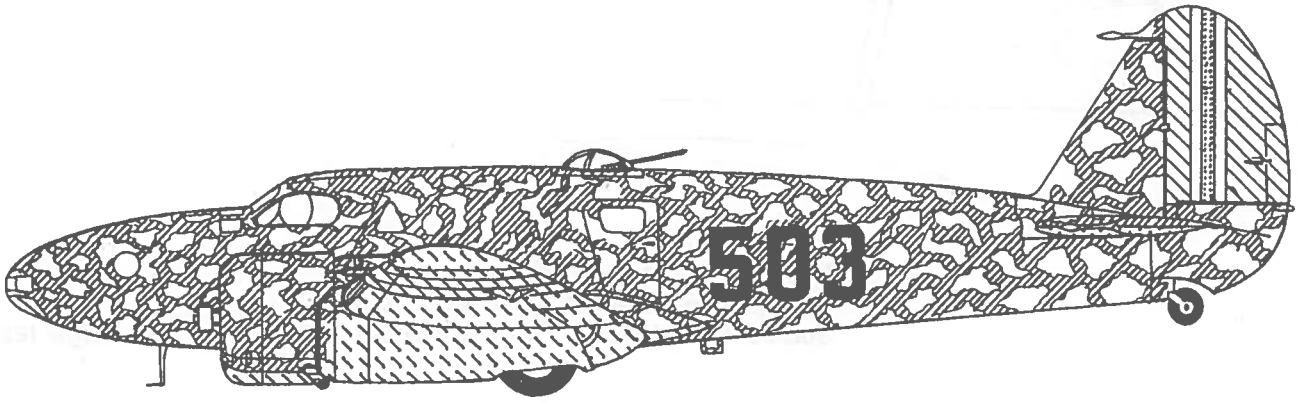
(Army Air Service)



GLOSTER GLADIATOR Mk.I (421)
Pilot: Lt. Dag Krohn
Fornebu Airfield, April 1940
Overall aluminum dope and bare metal
Serial number black
Sourse: Air International, March 1973, page 133



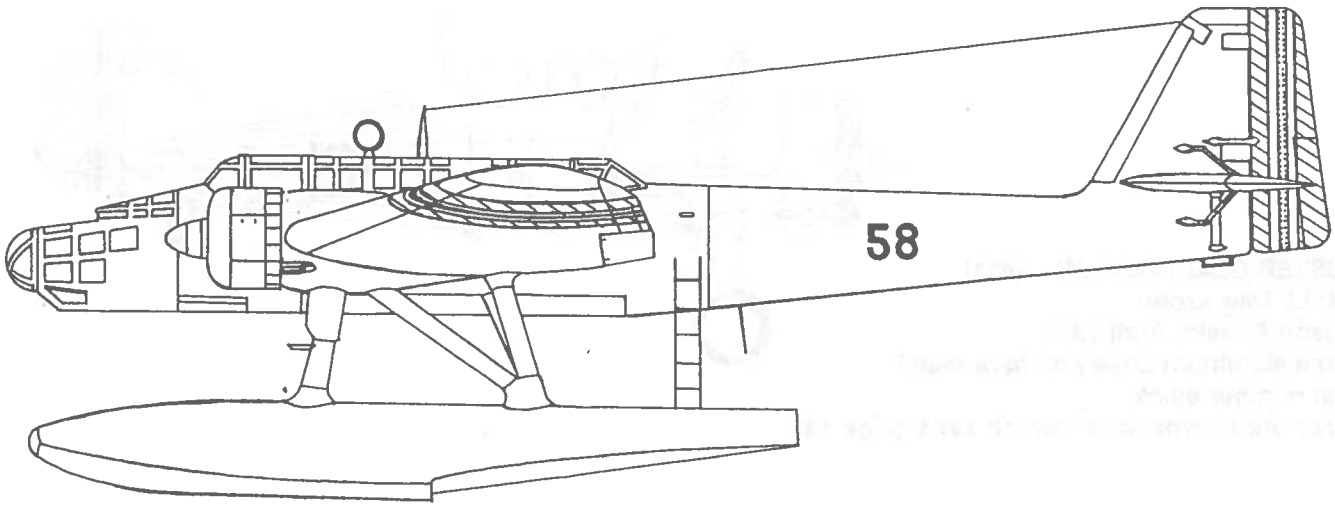
FOKKER C.VD (355)
Kjeller Airfield, 1935
Serial number white
Source: Encycopedia of Air Warfare, page 74



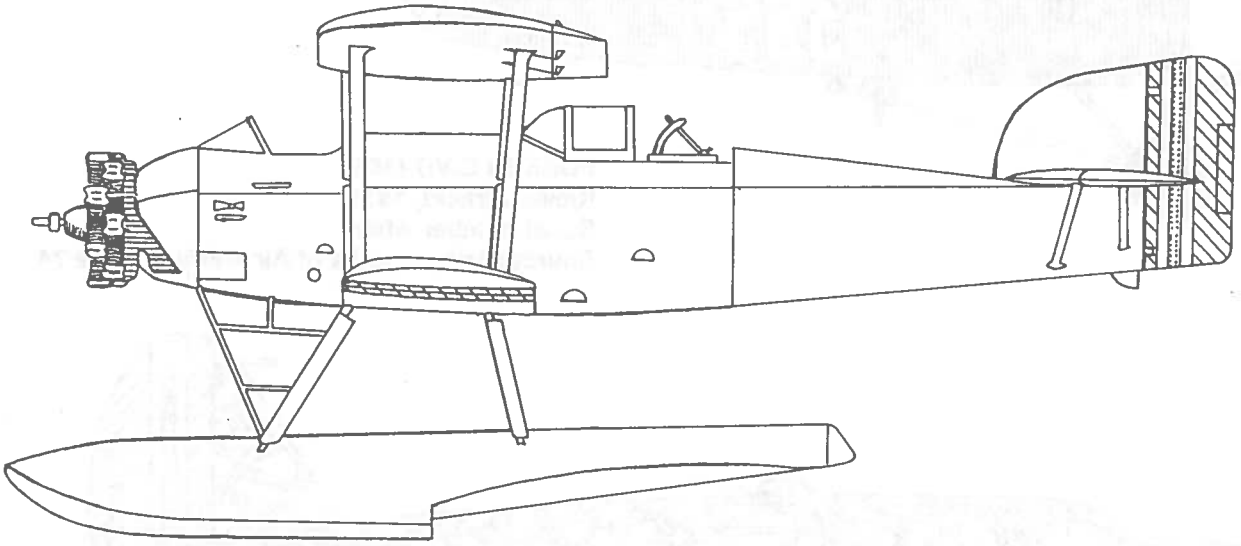
CAPRONI Ca.310 (503)
Bomber Flight
Stavanger/Sola Airfield, April 1940
Yellow Ochre over Dark Green (heavily feathered)
Serial number black
Source: Air International, November 1971, page 306

NORWEGIAN MARINENS FLYVEVAABEN

(Naval Air Service)



Heinkel He.115A (58)
Unit and location unknown
Overall light dull grey
Serial number black
Source: Air International, March 1987,page 155



Hover M.F. 11 (serial unknown)
Unit, location, & paint scheme unknown
Source: Line drawing, Combat Aircraft of World War Two, page 182


Dark Red


Insignia Blue


Yellow Ochre over Dark Green


Light (Italian) Gray


Dark Olive Green

ALDRI MER 9. APRIL

Marinens Flyvapen 1912-1940

The first aircraft of the *Marinens Flyvåpen* (Naval Air Arm) was a Rumpler Taube on Norwegian-made floats in use from 1912. It was later joined by a Maurice Farman Longhorn and Farman copies made by *Marinens Flyfabrik* in Horten, the main base for the Royal Norwegian Navy. The M.F. 1, 2, 3, 4, & 6 were all Farman-like pushers, while the M.F. 5 was a tractor aircraft. During WWI, a number of Sopwith Babies were obtained from the UK, and they served alongside Hansa Brandenburg W-33s which were built in Norway under license until the early thirties. The M.F. 7, 8, 10, & 12 were dual-control trainers made in small numbers, and the M.F. 9 was a seaplane fighter in use during 1925-36.

A Douglas DT-2B was bought from USA in 1925, along with a license for construction, to give the Marinens Flyvapen torpedo-carrying capacity. Six years later, the prototype M.F. 11 was tested. It was designed to replace the W-33 and 25 were built. Even though the *Marinens Flyvapen* was bolstered by Breda Ba 28 trainers and Heinkel He 115 torpedo bombers bought in the late thirties, on 9 April 1940 the number of aircraft available was far less than the 24 torpedo bombers and 30 scouts specified as a minimum in a Government Paper a few years earlier.

Colours: A weathered and faded sample of the standard colour "*Pansergrå*" is close to Methuen 20-c-1 or FS595a 36440. On black and white contemporary photos, this colour looks darker and it may have been more blue in hue than the sample.

National markings consisted of 6:1:2:1:6 red/white/dark blue/white/red bands on wing and vertical tail. (FS595a: red 11136, dark blue 15044, white 17875.) Each aircraft had its individual number painted on both sides of the fuselage, usually in black. The *Marinens Flyvapen* used even numbers on all aircraft.

Marinens Flyvapen in 1940

M.F. 8

This two-seat basic trainer first flew in 1924. Five of the eight built were still serving with the flying school at Horten in 1940, having logged 1000-1700 hours each, but they were used during the campaign. The five were F-2, 4, 6, 8, & 12.

Span 14.50 m, length 9.67 m, weight 1088 kg. Engine: 185 hp Walter Regulus II.

M.F. 10

A two seat advanced trainer first flown in 1929, this aircraft was evolved from the M.F. 9 fighter. Three machines were available in 1940; F-200, 202, & 204. F-204 escaped from Kristiansund on 9 April and was scuttled by its crew in a fjord. The other two were captured by the Germans at Horten and are reported to have been painted yellow with the text "*Fiskeriopsyn*" (Fishery Protection) and taken to Northern Norway in May 1940. Their ultimate fate is unknown.

Span 12.50 m, length 8.67 m, weight (loaded) 1448 kg. Engine: 280 hp A.S. Cheetah.

M.F. 12

The M.F. 12 was the *Marinens Flyfabrik*'s first monoplane. Test flights in the summer of 1939 lead to a disagreement between the test pilots and the constructor as to whether the construction was too weak or the test flying too rough. The aircraft was still in storage when the Germans came and it has been reported that the aircraft was taken to Germany after the invasion. The plane was numbered F-14.

Span 13.60 m, length 9.73 m. Engine: 225 Jacobs.

Modelling: Scratch building, I used parts from a Douglas World Cruiser and floats from a Matchbox Norseman to make a M.F. 12.

M.F. 11 SFR.3

The M.F. 11 was designed in 1931 as a successor to the Hansa Brandenburg W-33. Because it had to fit into the old hangars, the monoplane first sketched by Hover and his team had to be redrawn as a sesquiplane. It was somewhat underpowered with its 575 hp Panther engine, but proved to be a robust and seaworthy plane. It was so seaworthy that during neutrality patrols, the crew sometimes landed close to a vessel, got a small collapsible boat into the water, and rowed to and from the vessel.

It continued in production into 1940, when four planes to be fitted with BMW 132A engines of 850 hp were still in the assembly hall on 9 April. In all, 25 aircraft were delivered. They were F-300 to 346 plus F.134 (trainer). Due to lack of bomb sights and the light bomb load, they were not able to score any hits when attacking German shipping, and were mainly employed as scouts.

Lost before 9 April: F-300, 314, 330, 338, & 344. Lost during the campaign: F-304, 306, 308, 316, 328, 332, & 342. Seized by German forces: F-312, 316, 324, 326, 334, & 344. Flown to Finland: F-310, 336, & 346. Unknown fate (may have been left behind as unserviceable): F-302, 318, 320, 322, & 134.

F-310, 328, 342, & 346 were flown to Scotland from southern Norway; F-328 was shot down by British flak and the crew of three was killed, F-342 was damaged by British aircraft. F-310 & 346 were later flown from the Shetland Islands to Tromsø on 5 June; the necessary increase in range obtained by hand pumping fuel from cans in cockpit into main tanks during flight.

Both the Germans and the Finns used the M.F. 11. In Finland, three were used into 1944. This makes the M.F. 11 the only Norwegian designed plane ever to be exported.

Span 15.40/10.55 m, length 11.72 m. Engine: 575 A.S. Panther. Maximum speed 235 km/h, range 800 km. Armament: one flexible Colt machine gun on a scarf mount, one fixed Colt machine gun mounted on the top of the center section, and 300 kg of bombs.

Modelling: The M.F. 11 was kitted in 1/72 by Alpha models of Belgium; a nice vacuform which may be made into an excellent replica with some work. One of our Belgian readers might know if this kit is currently available.

Douglas DT-2

A Douglas DT-2B (F-80) was procured from the USA in 1924, Since it was found to be a good torpedo carrier, a license to build more was taken out in 1927. The first batch from Horten consisted of four planes, F-82, 84, 86, & 88. They were similar to F-80, being powered by Liberty in-line engines. In 1933, another batch with A.S. 14-cylinder twin-row radial Panther engines was built in Horten and designated DT-2C. The other Norwegian-built machines were converted to C standard at the same time.

In the early thirties, they were fitted with slots on the top wing, and still considered to be reasonably efficient torpedo bombers. When they were supplanted by He 115, consideration was given to substituting wheels for floats to lighten the aircraft, but this was not done.

F-88 was lost before the war and F-80, with its old Liberty engine, was not operational on 9 April. F-82 was undergoing maintenance at Horten. F-84 & 86 were ready at Horten and both were flown into hiding without torpedoes, but F-84 was seized by the Germans and F-86 was destroyed by a German vessel. F-90, 92, & 94 at Bergen, were destroyed during the German landing.

Span 15.25 m, length 11.86 m. Engine: 575 hp A.S. Panther. Maximum speed 200 km/h. Armament: one flexible Colt machine gun on a scarf mount, one 600-kg torpedo, four 100-kg bombs, or smoke-screen equipment.

Modelling: Minor modifications to Williams Brothers 1/72 Douglas World Cruiser will suffice; rebuild the nose, install slots, scarf mount, and use Aeroclub's cast-mental Panther.

Breda Ba 28

In 1936, five Breda Ba 28 seaplanes were ordered from Italy for use as intermediate and advanced trainers. One was lost when Norwegian test pilot Lützow-Holm crashed while performing aerobatics in Italy. The four others were flown home with civil registrations LN-EAD to EAH, later to become F-206 to 212. Since the Ba 28 was designed as a landplane, it was not protected from the sea environment and the main spars started to rot away. All four were being rebuilt at Horten in April 1940.

Length (with floats) 8.6 m. Engine: 280 hp A.S. Cheetah.

Reference: The Italian book "*Dimensione Cielo No 10*" has a drawing that has the Norwegian flag reversed.

Heinkel He 115

The only modern military aircraft used by Norway in 1940, six He 115A-2 torpedo bombers were ordered in 1938 and had been delivered from July to November 1939. Six more were ordered in November 1939 for delivery in March and April 1940, but none of these were delivered before 9 April 40. In early May, with the fighting still going on, Col Høver asked to have the advance payment refunded, and he got 1.65 million back within a week.

Armament consisted of two 7.92-mm Colt machine guns, and a torpedo or five 250-kg bombs. The nose gun-mount had been enlarged and strengthened to take a 20mm Oerlikon cannon, but this weapon was never fitted. Since the Germans were using a modified Norwegian torpedo for their aircraft, no major modifications were necessary to accommodate the F.2. torpedo of 800 kg with a 250-kg warhead and a range of 6000 m.

The six He 115 were numbered F-50 to F-60. All were serviceable on 9 April. F-60 was seized by German forces at Sola while being bombed up in the early morning on 9 April. Both He 115s based on the west coast (F-52 & 58) took part in attacks on German shipping along with the M.F. 11. F-58 forced the Germans to abandon the former Norwegian minelayer "Uller". These planes are reported to have been camouflaged with white paint, but further details are unknown. F-52 was flown to Dornoch in Scotland and F-58 to Tromsø in Northern Norway on 2 May.

F-50, 54, & 56 were based at Tromso on 9 April. They were supplanted by two He 115B from *Kustenfliegergruppe.106* on 13 April. Out of fuel, their crews had landed at Ørnes and Brønnøysund respectively. They had hoped to obtain petrol from the local Norwegians, but instead the local militia opened fire, forcing them to surrender. Both aircraft were taken over by the *Marinens Flyvapen* complete with ammunition, bombs and codes. One, M2+EH, became F-62, the other became F-64 after the necessary repairs and repainting. After taking part in a number of reconnaissance and bombing sorties, F-62 was left behind at Tromsø as unserviceable on 8 June when the last Norwegian forces in Norway capitulated.

The Norwegians were probably the only country to use the He 115 for ground attack; they strafed German aircraft stuck on ice, destroying at least two Ju 52. A number of reconnaissance sorties were flown, one into northern waters looking for signs of the feared Russian invasion. (Thinking of Poland.)

As the He 115 was of German origin, everybody except the Germans opened fire at sight, but the German forces were kind enough to hold their fire at least until the second or third attack run.

On 7 and 8 June, F-56, 58, & 64 were flown to Scotland, F-54 having to abort and was scuttled off the Norwegian coast by its crew. F-50 was flown to Finland, later to be used as HE 115. The four He 115 in Scotland were originally to be used for missions on the Norwegian coast like dropping leaflets and harassing German shipping, but the British didn't like the idea, as they preferred to look upon all He 115 as hostile. The four were later sold to England, at least two being used with Norwegian crew for clandestine operations from Malta.

Markings: "*Pansergrå*" overall and the usual national markings. This also applies to the machines taken from Luftwaffe.

Modelling: the Matchbox He 115 kit contain markings for the Finish HE 115. To make a Norwegian He 115 you will have to replace the machine guns with Colts and enlarge the nose gun-mount. I don't like the tranparencies made by Matchbox, and hope that one of the vacuform companies will make a replacement set.

Reference: See Air International, February and March 1987 for more information on the He 115.

Junkers Ju 52

DNLs Ju 52 floatplane Hauken (Hawk) was taken over by the *Marinens Flyvapen* in December 1939. It was fitted out as a bomber, painted in *Marinens Flyvapen* colours, and allocated the number F-400. It was undergoing maintenance at the DNL workshop on 9 April when it was seized by German forces.

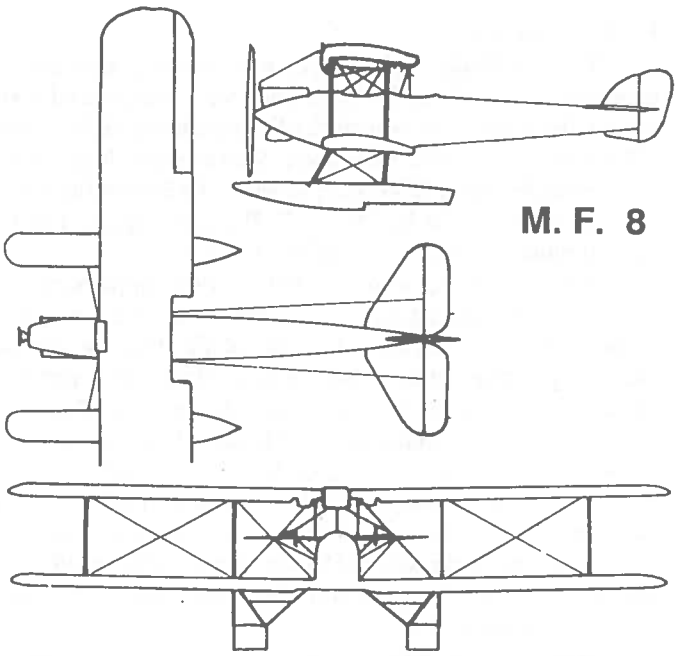
Armament: 2 Colt machine guns on free mounts and bombs. (Two other Ju 52 and a W 34 from DNL were also to be fitted out as bombers.)

Arado Ar 196

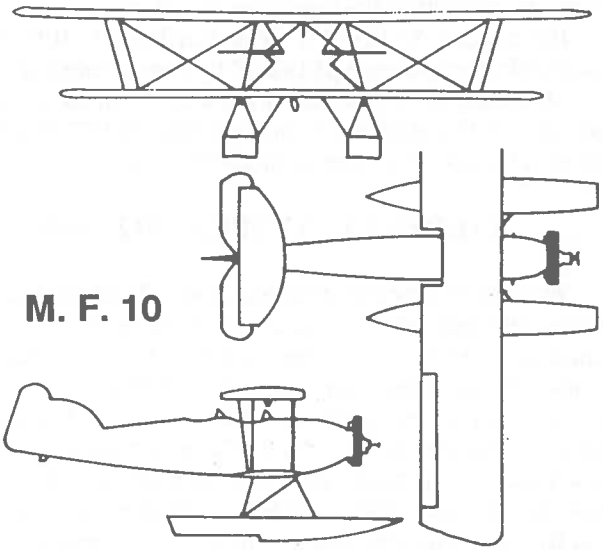
Late in the evening on 8 April, an Ar 196 from DKM *Hipper* landed close to Kristiansund N, to be joined by a British Walrus landing not far away a few hours later. Both planes and crews were interned, but as the situation evolved, the British plane was released and the Ar 196 was impressed into the *Marinens Flyvapen* and repainted in Norwegian colours. The Arado was flown to the Shetland Islands on 18 April, but was destroyed when a hamfisted commander from the FAA insisted on flying it to RAF Helensburg. No photos are known to exists of this plane; it was probably an early model Ar 196 with no fixed armament, but details of painting are unknown.

Reference: See Air International, 16-1, for general information on the Ar 196.

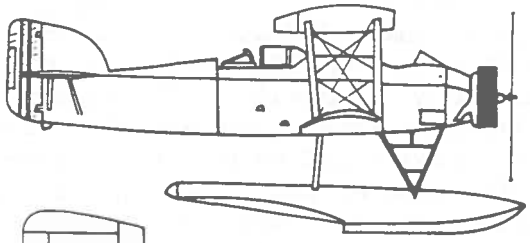
AIRCRAFT OF THE MARINENS FLYFABRIK

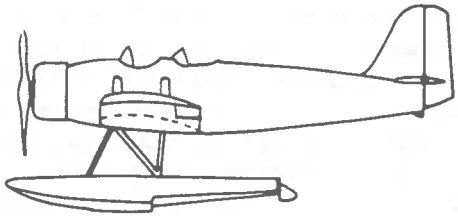


M. F. 8

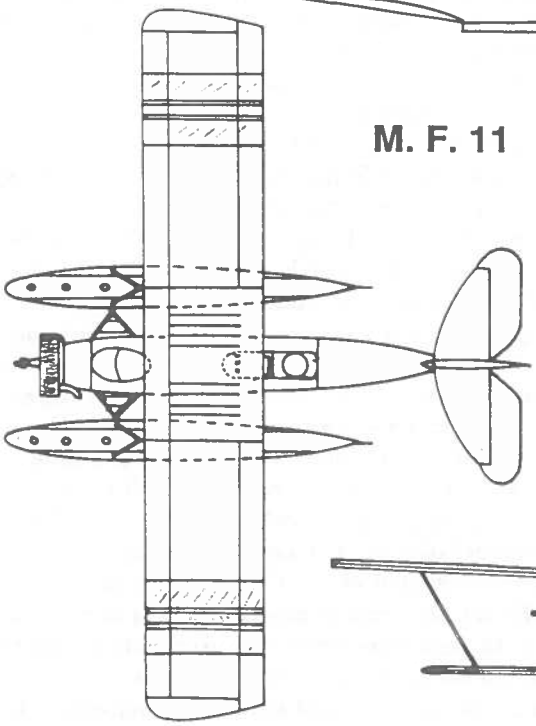


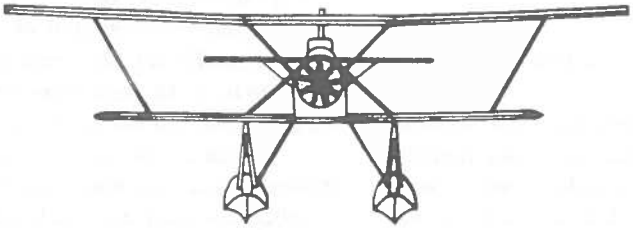
M. F. 10





M. F. 11





M. F. 12

Northrop N3PB

On 12 March 1940, 24 Northrop N3PB were ordered right off the drawing boards, to be delivered late in 1940. They were to be armed with two fixed 20-mm Oerlikons and Colt machine guns, and they were to carry a 900-kg torpedo or equivalent load. They didn't reach Norway before the campaign was over, but they gave sterling service with the Little Norway training camp in Canada and with 330N Squadron in Iceland.

References: SAFO #17 "The Northrop N-3PB" by Gus Morfis; "Northrop-flyene på Island" by Cayto Guhnfelt.

Modelling: IPMS Norway made a nice 1/48 vacuform a few years ago, and Contrail made an early effort in 1/72. If this latter is to be released once more, it should be completely reworked.

HAERENS FLYVÅPEN 1912-1940

The Army's first flying machine was a Drachen observation balloon delivered in 1905 to keep an eye on the Swedes, but the beginning of Haerens Flyvåpen (Army Air Arm) was three Maurice Farman Longhorn procured from France in 1912. They were followed by more pushers, some bought from France, some built under license, or just copied. The main base was at Kjeller, a few kilometers outside Oslo. During WWI and the next few years, BE-2e, Avro 504K and Bristol Fighters were procured from Britain. After building a number of prototypes, of which only the T-2 and Kaji trainers were placed in production, the *Haerens Flyfabrik* at Kjeller (Army Aircraft Factory) embarked on license building Hannover CL.V scouts and a number of Hansa Brandenburg seaplanes for use by the coastal artillery then controlled by the Army. In 1928, all seaplanes belonging to the *Haerens Flyvapen* were transferred to the Navy along with the coastal artillery units. 1928 was also the year when the *Haerens Flyvapen* received its first Fokker C.Ve from Holland. This plane was to become the mainstay of *Haerens Flyvapen* until 1940. De Havilland Moth trainers were also built at Kjeller along with further Fokker C.Vd/e recon-bombers in the thirties. Finding a fighter which could be flown on floats, skis and wheels as well as being powered by a A.S. Panther was to prove difficult. One each of Hawker Fury I (401) and ASJA J6B Jaktfalk (403) were procured and tested, but the choice fell on the A.W. 35 Scimitar, four being delivered in 1936. But even this plane was not able to stand up to Norwegian conditions, and in late 1937, six Gloster Gladiators were bought, followed by six more in 1939. Four Caproni Ca 310 bombers were procured in 1938, but they started to fall apart on the delivery flight. Still, the *Haerens Flyvapen* was short of the target set in 1938 of 36 fighters, 76 scouts/bombers and 51 trainers/utility aircraft. With orders for Ca 312 bombers, Curtiss Hawk fighters, Douglas 8A-5 scouts and FW 44 Stieglitz trainers, the CinC planned to have operational on 1 July 1940:

2 *Vinger* of 12 Curtiss Hawk
1 *Ving* of 10 Gladiators
2 *Vinger* of 9 Caproni
2 *Vinger* of 12 Fokker C.V

and a training unit with 1 Caproni and 12 Fokker C.V, with more aircraft to be delivered soon.

Markings: The Haerens Flyvapen used the same national markings as the Marinens Flyvapen, but they used odd numbers to identify individual aircraft. Numerals, usually in white, were painted on both sides of the fuselage. The standard finish was olive green; one sample being close to FS595a 34096. A restored Tiger Moth is finished in a glossier and deeper green shade.

HAERENS FLYVAPEN 1940

Fokker C.Vd & C.Ve

The first Fokker C.Vs that came to Norway were five C.Ve procured from Fokker in 1928. They were supplanted with 23 more C.Ve built in Norway under license during 1929-31 and 19 C.Vd built during 1932-39. Some C.Ve were rebuilt as C.Vd. All C.Ve and a few early C.Vd were powered by Bristol Jupiters, but the rest of the C.Vd had the A.S. Panther engine. The C.Ve carried numbers 301 to 355 and the C.Vd 357-393.

A few machines were lost before 1940, approximately 40 being left. The newest and best C.Vd were based in northern Norway and they were to do most of the fighting, attacking German positions around Narvik and taking out a number of German Ju 52 stuck on an ice-covered lake. The older planes were relegated to training duties at Kjeller, four were evacuated to Sweden, (C.Ve 343, C.Vd 345, 349, & 359, later to be joined by 355 on courier duty), others were destroyed by German bombing, while others were flown away from the advancing German army. In the south, Fokkers were mainly used as messengers, because too many German planes were in the air for them to be used in attacks.

In the north, no German fighter had the range to interfere, so the Fokkers could use their machine guns and light bombs to support Norwegian army units. The unit in Northern Norway *(Hålogaland flyavdeling)* consisted initially of C.Vd 379 to 389, later strengthened by Fokkers and Moths evacuated from the south. In one case, C.Vd 389 flown by *løytnant* Eggen was attacked by a German He 111. The very determined German pilot followed him through a narrow valley, with his front gunner spraying away at the C.Vd. The C.Vd gunner fired back, but the C.Vd's rudder was shot off and it crashed. Both Norwegians survived with heavy injuries, although the plane was carrying more than 100 kg of bombs when it crashed.

The Fokkers were joined in some sorties by the Marinens Flyvapen's He 115 which could carry heavier bombs. As most Fokkers initially were fitted with skis, in the thaw it became necessary to improvise by fitting wheels from old cars. Another Fokker C.V was repaired after hitting a tree on landing by stuffing hay into the wing; adding a hay-winged C.V to an inventory of long-winged (C.Ve) and short-winged (C.Vd) Fokkers.

One of the C.V flown to Sweden, 349, was acquired by a civilian company for use as a target tug and for spraying fertilizers. In 1949, it was given back to the RNoAF and flown home. This C.Vd is now fully restored and rests at the Norwegian Air Museum at Gardermoen 40 km from Oslo.

Two Fokker C.Vd interned in Finland were used by them during 1940-45 as FO-65 and 66. Most C.V left behind to the Germans were rendered unserviceable and I have no indications of any Norwegian Fokker C.V in German service.

Armament consisted of one Colt machine gun on a scarf mount, one fixed Colt. Small bombs, usually not more than 150 kg of up to 50 kg each, were carried on wing and fuselage racks on the C.Vd, but the C.Ve could carry a little more.

Colours: Olive green overall with the cowling usually left in natural metal. National colours on wings and tail as usual. White numbers on both sides of fuselage. During the campaign, most C.V were camouflaged with white paint to blend in with the

snow-covered ground. It was applied by hand painting, either in narrow zigzag bands on upper surfaces and fuselage sides, or in large blotches covering most of the aircraft. The paint was crudely applied and weathered fast. (Probably an water-soluble chalk-based paint.)

Modelling: I know of three kits, one by Alpha Models of Belgium (not up to the standard of their M.F. 11), another by Truckers Mate of Sweden (which was a nice try, with a conversion set available to build a -d from the -e kit), and, most recently, one from Airmodel/ Frankmodel of Germany.

Not all four variants promised by Airmodel had been released when I wrote this, but I have been able to review one. Although the resin pieces are made to a very high standard, I found the vacuformed parts a bit disappointing. No details of the main fuel tanks have been moulded into the top wing, and I think the fuselage should be more square, with stringers on the sides indicated by raised lines. I do not know if they are to release a kit with -d wing. There was a vast number of Fokker C.V variants in Norwegian service; I know of at least three different types of undercarriage (more if you count in skis), five different engines, and two types of wings. When I have seen all Aeromodel's C.V kits, I should be able to tell which one will be easiest to build into each Norwegian variant. (The Fokker C.V was used by a large number of air forces around the world, and it would make an interesting SAFO project.)

De Havilland Gipsy & Tiger Moth

As with many other countries around the world during the thirties, the De Havilland Moth was used as a trainer in Norway. In 1929, three Standard Moths were procured from De Havilland, and a license for production at Kjeller was taken out. The three original D.H. built planes wore numbers 101, 103, & 105 and were used for a number of trials. Two of them even wearing civil registrations N-45 and 46 when carrying mail. In 1931-32, 10 more with numbers 107 to 125 were delivered from *Kjeller Flwyfabrik* to take over for the Norwegian *Kaje* trainer.

During 1933, production was switched to the Tiger Moth, 17 being delivered during that year. Another batch of 20 was finished in 1935, and a single one in 1937. The Tiger Moths carried numbers 127 to 201, and as they became available, most Gipsy Moths were declared surplus and sold to civilians.

On 9 April 1940, the three remaining Gipsy Moths 119, 121, & 125 were undergoing maintenance at Kjeller and were probably destroyed by German bombing, a fate they shared with a number of Tiger Moths. The commander of the Flying School ordered its evacuation to an ice-covered lake nearby, and then on 15 April to neutral Sweden. (He was later to take much criticism for this.) The evacuees brought along Moths 127, 131, 137, 149, 157, 163, & 189 (other numbers have been quoted, but it is certain that there were only seven Moths) and four Fokker C.V. The interned Moths became SE-ALK to ALR (ALO not used) and ANL in the Swedish civil register; one may still be flying.

Before the war broke out, 135, 143, 147, 155, 161, 173, & 197 had been lost. Moths had been distributed to the various units around the country as hacks, and as 199 was flying along the Finnish-Russian border during the war between Finland and Russia, it was intercepted by a Russian fighter over undisputed Norwegian territory and evaded being shot down only by some risky low flying. Even if one or two of the Moths had been fitted with fixed machine guns for training purposes, no armament was carried by the others. Their only defense was flying low and slow.

Except for 159, which was evacuated to Finland, all the others were lost during the campaign and at least one was later to be seen in German markings.

All aircraft were finished in the usual way, except for 171, which was the personal mount of *kaptein* (captain) Clason. It was silver doped, with a band of national markings around the fuselage behind the cockpit and black number further back. Clason saw it receive a direct hit in the cockpit during the bombing of Kjeller on 9 April, but was glad he wasn't in to have to have the bomb explode on his lap. The remaining Tiger Moths were used mainly for courier duties during the campaign, sometimes also flying recon sorties; at least one plane being shot up during such a sortie.

One of the planes flown to Sweden has been brought back to Norway and is currently exhibited at the defense museum in Oslo.

Colours: Olive green overall with white numbers and the usual national markings. Fittings and struts were sometimes covered with a black protective paint, and sometimes finished in olive green as the rest of the plane. Some of the Norwegian Tiger Moths received makeshift camouflage of the same kind as applied to the Fokker C.V during the campaign.

Modelling: Novo's 1/72 and Aeroclub's vacuform 1/48 Gipsies can be made into nice models with some work. When it comes to the Tiger Moth, it will be necessary to remove slats and anti-spin strakes. In 1/72, I prefer Aeroclub's kit to Airfix's old offering because it looks more like number 151 as exhibited in Oslo.

Armstrong Withworth A.W.35 Scimitar

The Armstrong Withworth A.W.35 Scimitar was chosen as the plane to equip *Jagervingene* (Fighter squadron) in the late thirties, and four aircraft were procured for definitive tests and to serve as patterns for license production. They were delivered in January 1936, with numbers 405 to 411 painted on and tested on skis during the winter. Preparations for license production were halted because its undercarriage was too weak for skis and because it had not be adopted by the RAF. Aircraft 411 was lost during an air show in 1937 when it failed to recover from a simulated dive bombing attack. After the six last Gladiators were received, the remaining Scimitars (called *Falk* - Falcon) were relegated to advanced trainers. They were at Kjeller on 9 April and were probably destroyed during the attack.

Span 10.0 m, length 7.62 m, maximum speed 345 km/h. Engine: Panther IX of 730 hp.

Colours: They were finished in Norwegian colours on delivery, probably with paint available in England close to the standard Norwegian ones. With Polished metal panels from the cowling to behind cockpit, the rest of the aircraft was covered with dark green doped fabric. Usual national markings and numerals were carried

Modelling: As the FROG Penguin kit of the Scimitar has been unavailable for 50 years, scratch building will be necessary.

Reference: Aeroplane Monthly, November/ December 1986 had an excellent feature. Also see SAFO #11.

Gloster Gladiator

Six Gloster Gladiator Mk I were procured in 1938 and given numbers 413 to 423. Then, in the fall of 1939, bolster the Jagervingen, six Mk.II were diverted from an RAF contract and sold

to Norway. The ex-RAF Gladiators (N5919-24) became 425 to 435.

Three aircraft had crashed before 9 April and with two of the remaining undergoing maintenance, Jagervingen at Oslo/Fornebu had seven fighters operational. They had exchanged skis for wheels in mid March as the concrete runway could be kept free from snow, gaining 40 km/hr in top speed by doing so. The seven were sent up to patrol the air space around Oslo on the morning of 9 April as the commander became aware that something was going on. They were flown by *løytnantene* (lieutenants) Tradin, Krohn and Bråthen. *fenrik* (lieutenant junior grade) Thorsager, *sersjantene* (sergeants) Schye, Lütken and Waaler. The first shots were fired at 0800 in the morning after intruding planes had been identified as German, and the Gladiators accounted for at least 3 He 111 and 2 Me 110. Schye crash landed 427, two other planes were shot up while refueling at Fornebu. The other four landed on ice-covered lakes, and only two of them were able to take off and join the other units of the *Haerens Flyvapen*. Parts from one were used to keep the other flying, and the last Gladiator was lost on 21 April when it developed engine trouble while checking out German activity at Gardermoen, hitting some tree tops and getting home in a condition beyond all hope of repair.

Colours: Except for usual national markings on wings (1.0 m band) and tail, the Gladiators were finished as early RAF machines, i.e. aluminum doped wings and fuselage covering with anodized aluminium panels and numbers in black. One machine, 433, was finished in an experimental scheme of olive drab sprayed on in a meander pattern on upper parts, light blue sprayed on the same way on lower surfaces with light brown on areas shadowed by the top wing; the national markings consisted only of a band around the fuselage behind the cockpit, and much smaller numbers than usual were painted on the tail. There were also thoughts about finishing the Gladiators as the Ca 310s, with green meander pattern on grey bottom.

Modelling: Heller's 1/72 Gladiator contained decals for 427 and 433 when released in Norway, and although the blue colour is too light, the decals are otherwise sound. All Norwegian machines had two-blade propellers and you will need to add two small antennae on top wing. No other modifications are necessary. A 1/48 kit has been released by a number of companies; it is fair for its age.

Reference: Cato Guhnfelt, who wrote about the Northrop N3PB, is working on a book about the Gladiators of Fornebu. He will probably come up with new and corrected material, so I have only written what I know is certain.

Caproni Ca 310

In 1938, the *Haerens Flyvapen* was looking for a modern bomber. A plane built of wood was preferred because it would be easier to build under license at Kjeller. The two main contestants were the Avro Anson and Caproni 310. The Ca 310 was chosen because it fitted the specifications well and payment could be made by delivery of *klippfisk* (dried cod) to Italy. This gave it a nickname, "*klippfiskbomberen*". Four Ca 310 were flown home from Tolido in October 1938. Numerous problems occurred with all four during the delivery flight, most of them caused by bad workmanship at the factory. Aircraft 501, 503, 505, & 507 were the first twin-engined planes used by the *Haerens Flyvapen*. They were mainly used by *Bombervingen*, and on 9 April three were based at Stavanger/Sola along with 6 Fokker C.Ve. One was at Kjeller undergoing maintenance and was probably destroyed by bombing. At Sola, one was damaged beyond repair by bombing. Another was damaged later when forced down by German planes. The last Ca 310 was flown to Lake Vangsmjøsa where it was left on the ice. The Germans took it ashore before the ice broke up, but they didn't care to take it away. Some parts may still be there.

Armament consisted of up to 400 kg of small bombs and two Colt 7.92 machine guns, one in the right wing root, one in a dorsal turret. Another machine guns could be mounted in left wing root, but we didn't have right guns. The turret was opaque, and during gunnery practice, a gunner once aimed at a white house instead of the target, fortunately without casualties. There were plans of fitting guns of 20 or 40 mm caliber (at least as powerful as on the He 115) in the Ca 310, but this would probably have shaken it apart.

In late 1939, two Ca 312 were ordered to serve as patterns for license production. The Ca 312 was an improved Ca 310 with better performance. A first batch from Kjeller was to comprise 18 planes, and 12 more were later ordered from Italy. Some parts were ready on 9 April, but no aircraft was yet finished. I have seen photos of the two; 509 & 511 in Norwegian markings in Italy. They were not delivered before 1945, and when the Italians asked the RNoAF to pay up and collect their aircraft, the answer was a very clear NO! The Ca 312 were to carry numbers from 509 and upwards.

Markings: Green meander pattern sprayed over grey with plain grey undersides, as usual on Italian planes. (At least one Ca 310 was repainted in these colours in Norway.) Normal national markings and numbers in black. The photos show 509 and 511 in these same colours.

Modelling: Ca 312 can be built straight from the box of Italaeri's Ca 312 kit. For the 310, you will need to change from a 9- to a 7-cylinder engine, rebuild the fuselage, and make a new nose.

References: *Dimensione Cielo 5* and Salamander's "Bombers of WW 2".

Curtiss Hawk 75

In 1939, the Fiat CR.42, Seversky P-35, Vultee V-156, and Curtiss Hawk 75 were the main contestants for a modern fighter to be used by *Jagervingene*. As the Curtiss Hawk 75 could be delivered as early as the spring of 1940, it was chosen even if it could not be fitted with skis. Twenty-four Hawk 75A-6 with P&W Twin Wasp engines were ordered, but only 19 reached Norway.

A few were ready to be test flown at Kjeller on 9 April, but they could not take off because the field was covered with wet snow, and they were stuck until the snow had melted or froze so hard that they could fly off from it. A roller tried to make the snow compact enough so that they could fly to Fornebu a few kilometers away, but to no use. There were start-skis (skis which fell of after take off; the plane then landed on wheels at another airfield) available for other aircraft, but modifications would have been necessary. After the German attack, W. W. Bulukin volunteered to try to fly one away to an area held by Norwegian forces when thaw had melted the snow, but this wasn't tried.

At least 13 Hawks were taken by the Germans and transferred to Finland. They had serial numbers in the 13643-13665 range, exclusive 55 to 58 which were not assigned to Norway. 13643,-49,-51,-52,-65 fate is unknown after the German attack, but may have been damaged by bombing and used for spares to

rebuilt the others. Aircraft 13666-70 were diverted to the RAF before delivery.

The Curtiss Hawks should have become 437-483 in Norwegian service. Photographs exist of 439, 445, 447 and 449 in a fairly complete state at Kjeller. In February 1940, 36 more Hawks were ordered, these being of the 75A-8 version with Wright Cyclone engines. They were all diverted to the Little Norway training camp to be used as advanced trainers. The aircraft that remained in 1942-43 were sold to Peru.

Colours: The Hawk 75-A6 were in natural metal with the usual national markings and black numerals. The Hawk 75A-8 wore a light green colour in Canada, with Norwegian national markings and black numbers (401, 403, 405, 443-469 except 463) painted on machines that went into use. The others were stored in crates.. Numerals sometimes repeated on the cowling.

Modelling: No really good kit exists, but you can work most 1/72 offerings and the AMT 1/48 kit into a reasonable replica with a lot of work and parts from P-40 kits, Aeroclub, and DB conversions. In 1/48, JMGT's vacuform is easier to obtain and generally more accurate than the AMT kit.

Focke Wulf FW 44J Stieglitz

In April 1940, ten FW 44 were ready to be collected by Norwegian pilots in Germany. Instead of supplanting Norwegian Tiger Moths, werkenr 2775-82 and 2826,7 went to Finland as SZ-11 to 20. They would have been numbers 1 to 19 in the *Haerens Flyvapen*.

Modelling: Humamodels kit is to be preferred. It is a limited run injection moulded kit and suffers a bit from it, but can be made into a nice model with some work.

Douglas 8-A5

Thirty six of these attack bombers were ordered in early 1940, with delivery scheduled for late 1940. All went to the Little Norway training camp as Norway was occupied. Eighteen were to be sold to Peru in August 1941, were retained by the USAAF. The 13 remaining of the 18 used in Little Norway were finally sold to Peru in mid 1943, and may have been joined by some of the planes used by the USAAF. In Norwegian service, they carried numbers 301 to 319 painted in black, and they wore the usual Norwegian national markings on their natural aluminium finish along with olive drab antiglares panels and a red or blue lightning zap along the fuselage.

Modelling: Use Rareplanes 1/72 vacuform or Classic Castings 1/48 resin Northrop A-17A kits. Add to this a Douglas Dauntless cowling complete with Cyclone engine and build up the ventral bath for the gunner/bombardier.

GENERAL NOTES

This is not meant to be the definitive reference on aircraft used by Norwegians during the campaign in 1940. You should think of it as a summary of sources printed in Norway and not generally available in the rest of the world. If you are interested in Norwegian aviation, you should write to the Norwegian Aviation Historical Society: Norsk Flyhistorisk Forening, Boks 226 Sentrum, N-0103 OSLO 1, NORWAY. They have a number of publications available. I would also like to recommend a book named "*Fra Spitfire til F-16*" which covers the RNoAF 1944-84, with numerous photos and drawings, probably available through Albion Scott.

I have chosen not to include, in the main text, two aircraft used on courier flights from Sweden during the campaign, because even if they were owned by the Norwegian government, they still wore Swedish civil registrations. They were Götaverken GV-38 SE-AHD (license-built Rearwin Sportster; see AIRInt Sep 72) and Junkers W 34 SE-AEH (profiled in SAFO #3), hastily bought in late April 1940. A few Norwegian civil aircraft were also flown along with the military planes, but little is known of their use. They include two Cubs, a Waco F, a Klemm 25 (LN-EAG) and the Norwegian-made Norge A (LN-FAM) from Widerøe Flying School. They were used as light transports and for some surveillance duties. No reports of any being armed or repainted in military markings. They wore their civilian LN-codes and Norwegian flags on tail as before.

The question often asked is: Why were we not better prepared to defend Norway? Some blame the politicians because they didn't vote more money to the armed forces before it was too late, but you will have to remember that the international depression in the thirties affected Norway with massive unemployment as a result. Hard currency was not easily available, and this made it necessary to find someone who wanted to barter planes for Norwegian goods. For a poor country with no obvious enemies after WWI, modern war planes were an unaffordable luxury. We also lacked the kind of industry, for instance car factories, which could be transformed into aircraft production in an emergency. All this made it natural to keep on license building wooden aircraft as long as possibly. On the other hand, the recession meant that relief work projects (like building the Hoover dam in USA) were started. They gave us modern airfields with concrete runways at Stavanger/Sola and Oslo/Fornebu as well as improved grass fields to be used by both military and civilian aircraft. But most equipment needed by our air arms had to be imported or made by skilled workers. As an example, each F.2. torpedo made in Horten cost 35.000 NOK, or the equivalent of two Tiger Moths trainers. A bomb cost far less, 50-100 NOK, but it is no surprise that live firings were seldom done. A few bombs had been bought from Germany (Some of these 250 kg failed to explode, one was opened and found to contain nothing but sand!), others were made at the Norwegian government's ammunition factory at Raufoss.

Few military planners had thought of a German attack in which they could seized all the major cities and ports along the coast within a few hours. Britain's Royal Navy "ruled the waves" and the fact that DKM vessels could move through the North Sea up to Narvik came as quite a shock. Norwegian plans were to meet an attack from Germany or Russia which had to force its way through Denmark or Sweden, giving the necessary days to mobilize.

In the thirties, there had been thoughts about an independent air force created by amalgamating the two air arms. A suggestion from the CinC in 1937 consisted of a Flyvåpen with:

3 *Jagervinger* (fighter squadrons) of 12 aircraft
2 *Lette bombervinger* (light bomber sq.) of 12 aircraft
1 *Medium bomberving* (Medium bomber sq.) of 12 aircraft
2 *Vinger torpedofly* (Torpedo plane sq.) of 12 aircraft
3 *Vinger landspeiderfly* (Land based scout sq.) of 12 aircraft
4 *Grupper Sjøspeiderfly* (Seaplane scout units) of 6 aircraft

The Navy, not wanting to relinquish control of their seaplanes and fearing a *Flyvåpen* dominated by the Army, was most negative to this. Eventually, it was decided to keep the

partition as it was. I know of only one case when the divided air arms gave serious problems during the campaign. On 9 April, Bombervingen at Stavanger/Sola was not allowed to attack German shipping because they were the *Marinens Flyvapen* responsibility until they came into a port. The rest of the time they worked well together, with Marinens Flyvapen He 115s attacking German positions guided by *Haerens Flyvapen* Fokker C.V.

During the exile, a common training center was set up in Canada and named "Little Norway" with personnel and planes from both arms. Men and women trained there formed 330, 333 and 334 Maritime Sqs. and 331, 332 Fighter Sqs. in the RAF, as well as serving with other non-Norwegian squadrons.

In 1944, Luftforsvaret was founded and with it the *Det Kongelige Norske Flyvåpen* (Royal Norwegian Air Force) of today. The common training center could be built up quickly because aircraft already ordered could be diverted and money earned by the Norwegian merchant fleet was available to buy more equipment, such as Cornell PT-19 and -26 trainers and Stinson Reliant seaplanes.

I will also like to mention the way that the air arms trained flying personnel before the war. As well as having a nucleus of highly skilled officers, 10-15 conscripts were chosen each year to train as pilots and navigators. They were selected as best fit and with high level of education, serving for a year with exercises lasting a month each of the following four years. This gave Norway a number of military trained pilots, so we might have been able to make use of all the aircraft to be delivered in 1940. Plans were also in hand to use civilian flying schools to train more flying personnel if necessary. If all these planes had been delivered, they might have made it too costly for the German Navy to attack. A squadron of torpedo-armed Northrop N3PBs could have wrought havoc among German shipping. Norway would then have been able to keep out of the war as Sweden did. Norwegian military planning of today is based on repelling a surprise attack from any direction, and we have a saying "Aldri mer 9. April" or "Never another 9 April".

I would like to thank all those who made it possible for me to do this article, especially the enthusiasts of Norsk Flyhistorisk Forening.

Can anyone help me with the following? (1) Copy of article in *Aerei Modellismo* Feb 80 or 81 on converting Italaeri's Caproni Ca 311 into a 310. (2) Information on ex-Norwegian Hawks and Douglas 8-A5 in Peruvian service. (3) Information on German use of ex-Norwegian aircraft.

Kurt Erik Hagen (SAFCH #904), Stamhusveien 67, N-1181 Oslo 11, NORWAY.

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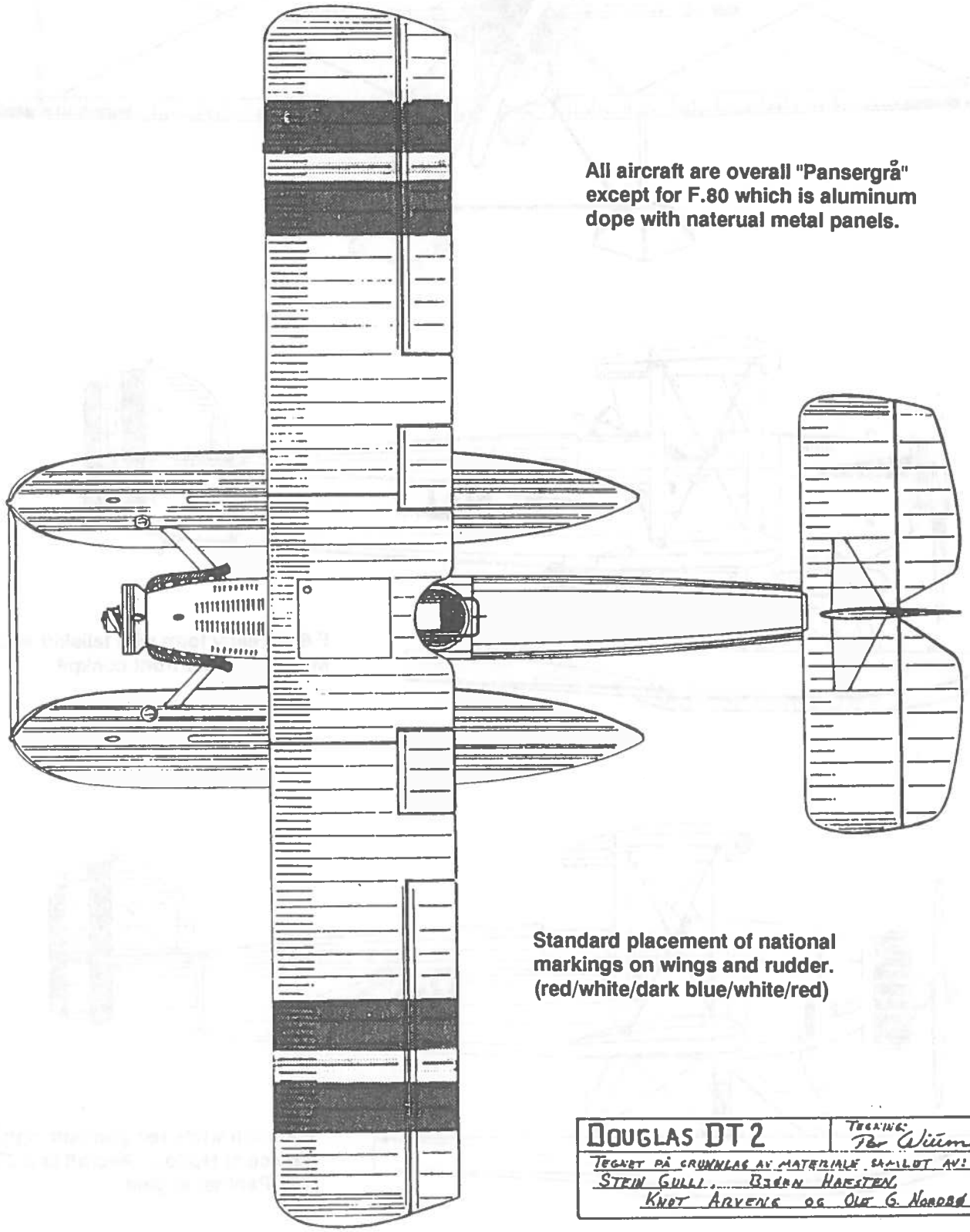
BOLKHOVITINOV BI, 1/72-scale injection-molded kit, USSR, address and price unknown.
The BI (Bereznyak and Isaev) rocket interceptor had its first powered flight in May 1942, but work on a production batch of 50 terminated in March 1943 after a fatal accident revealed uncorrectable control problems.
Molded in black plastic, the 20 parts are flash free with engraved control surfaces and raised panel lines. The single surface wings and horizontal stabilizer are commendably thin and blemish free; only the separate rudder (why separate?) has a thick trailing edge. Interior detail consists of a floor and a nicely detailed seat, and this should be sufficient considering the small size of the canopy. The canopy is a little too thick and not very smooth; Future floor wax may help, but polishing or vacuforming a new canopy might be necessary. The cannon and various pitot tubes are on the heavy side and should be replaced.
The kits matches well with the references, but you'll have to add the struts bracing the tailplane and a small air inlet on the nose, and delete the pitot-tube assembly on the port wing. Wheels are included, but it should not be too hard to scratch build the ski undercarriage shown in most of the references. Instructions are limited to an exploded construction diagram and a small 3-view drawing showing a color scheme of dark green over light blue (at least that's what I assume the Russian words mean). There are no decals, but the un-outlined red stars should be easy to find.
A color drawing in FLYING REVIEW INTERNATIONAL, June 1969, shows the aircraft in a dark green and brown camouflage with light blue under surfaces. This scheme is supported by a photo of the glider-version of the aircraft, but it is impossible to verify (or refute) any camouflage pattern on the photos of the powered version. These color drawings show the red star in four wing positions and on the fuselage with a white '3' on the rudder.
This kit will make up into a nice model whose tiny size (9 cm wingspan) will dominate any display, particularly if fitted with a ski undercarriage and placed on a snow-cover base representing Sverdlovsk in the late winter of 1942.

DE HAVILLAND SEA HORNET F.20, 1/72 injection-molded kit, Skybirds '86, Orchard House, Chetnole, Sherborne, Dorset, ENGLAND DT9 6PE. $22.00 plus $4.00 for postage.
Another outstanding kit from Skybirds '86. Included are 19 limited-run injection-molded parts, 26 metal castings, one vacuform canopy, and a decal sheet. While the plastic moldings fall a little short form what we have come to expect from the best limited-run kits, the metal castings are the best I've seen. It's an expensive kit, but you do get your money's worth. How many of today's kits can you say that about?
[Editor's note: Mike Eacock of Skybirds '86 writes that his kit of the Percival Prentice is not selling as well as it should. If the review in SAFO #53 did not convince you of how good this kit is, maybe the "Step-by-Step Kit Review" in PKC, May 1990, will.]

HAWKER SEA FURY, 1/72-scale injection molded kit, Pioneer 2, $9.00. Available from Discount Hobbies, PO Box 370, Utica, NY 13503 for $5.98 plus $2.50 p&p.
In quality and in imagination in subject selection, Pioneer kits have always reminded me of the old Frog kits. The Sea Fury is no exception. Placing the two kits side by side gives an instant summary of how far plastic modeling has come in the last 30 years. The first thing that impresses me is the unnecessary large number of parts in the old Frog kit. All flying surfaces are double surfaces, control surfaces are separate, and the wing is separated along the folding joint. How did we ever make decent models from such kits?
In contrast, the Pioneer Sea Fury is the essence of simplicity with all parts on three sprues of light-grey plastic. The lower surface of the wing comes in one piece to ensure proper dihedral. The parts are crisply molded with engraved panel lines. The interior is a carbon-copy of the Frog kit including that thing Frog laughingly called a "seat", and the landing-gear struts are over simplified. Since the canopy is well molded but thick, a vacuform copy would probably be a good idea. The instruction sheet is rudimentary but sufficient, but the decals are disappointing (Canadian and RAF) and the small-air-force enthusiast will undoubtedly choose a more exotic scheme; e.g. Cuba, Egypt, Iraq, Pakistan, Burma, or even the Netherlands.
The super detailer will have a ball adding embellishments to this kit, and since the kit goes together quickly, there will be plenty of time to spend on this activity. The rest of us will enjoy the pleasure of producing an attractive model right from the box, with all our excess energies spent on applying an exotic color scheme.
[Editor's note: I've still got a lot of unsold Pioneer Beech C-45s. I can't very well ask Pioneer for new kits unless the old ones are sold. Anyone want to produce an article on the C-45 to stimulate sales?]

Gribowski G-11, 1/72-scale vacuform kit, Thovac. Address and price unknown.
You might have trouble finding information on this WWII light assault/transport glider; I wasn't able to find it in any of the four books I have on Russian aircraft. However, I did find it in L+K #26 1979 in their "Letadla 39-45" series where there are two photos and a nice 3-view drawing. Color side and
(Continued on page 93.)

NORWEGIAN DOUGLAS DT-2

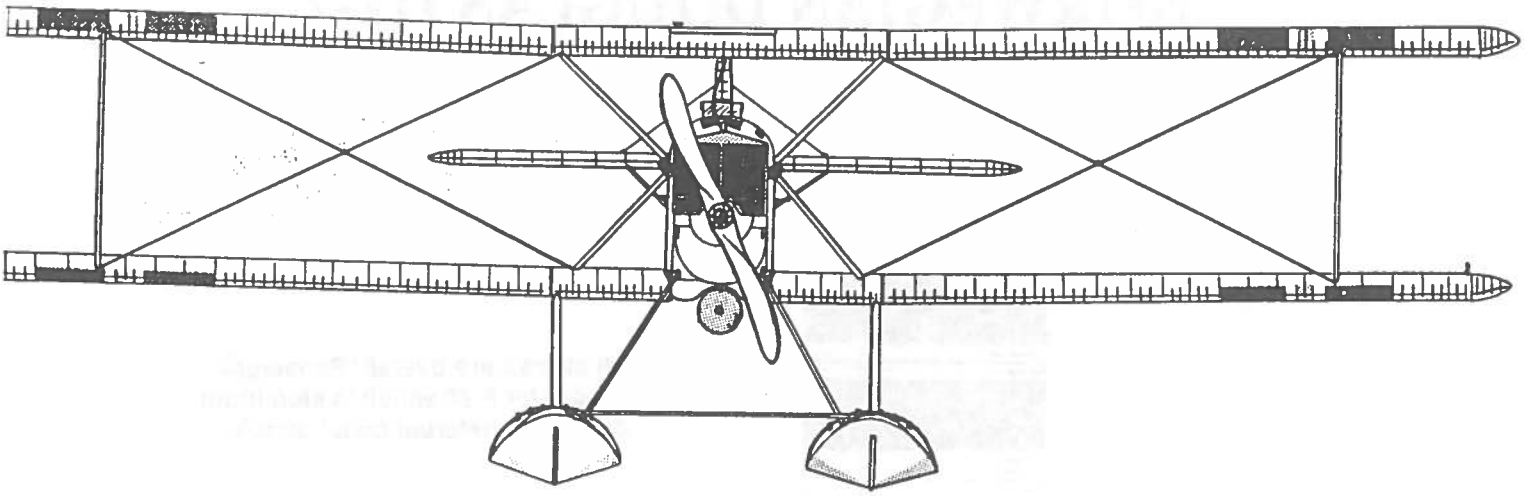


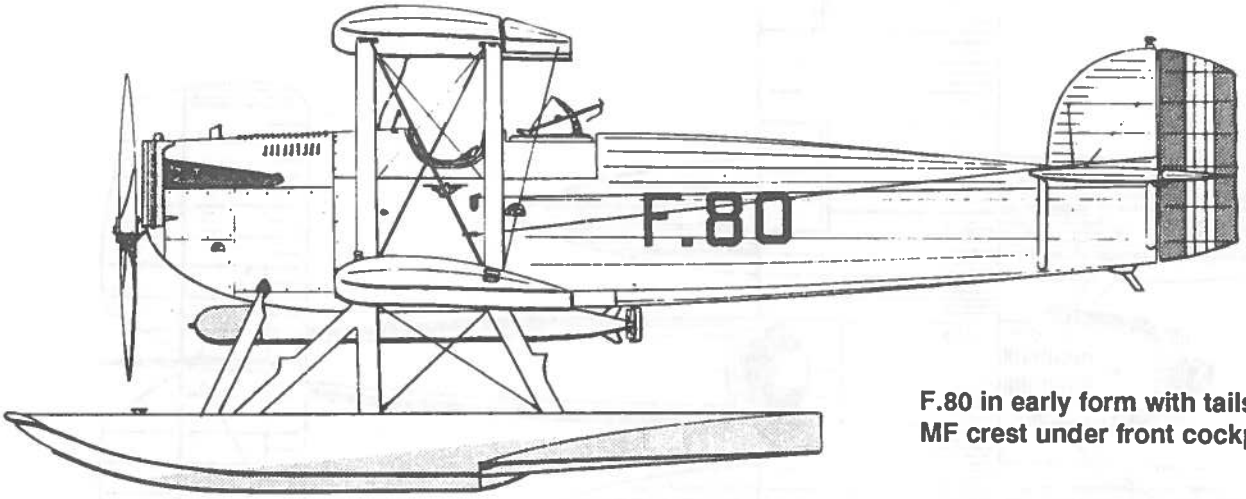
All aircraft are overall "Pansergrå" except for F.80 which is aluminum dope with naterual metal panels.

Standard placement of national markings on wings and rudder. (red/white/dark blue/white/red)

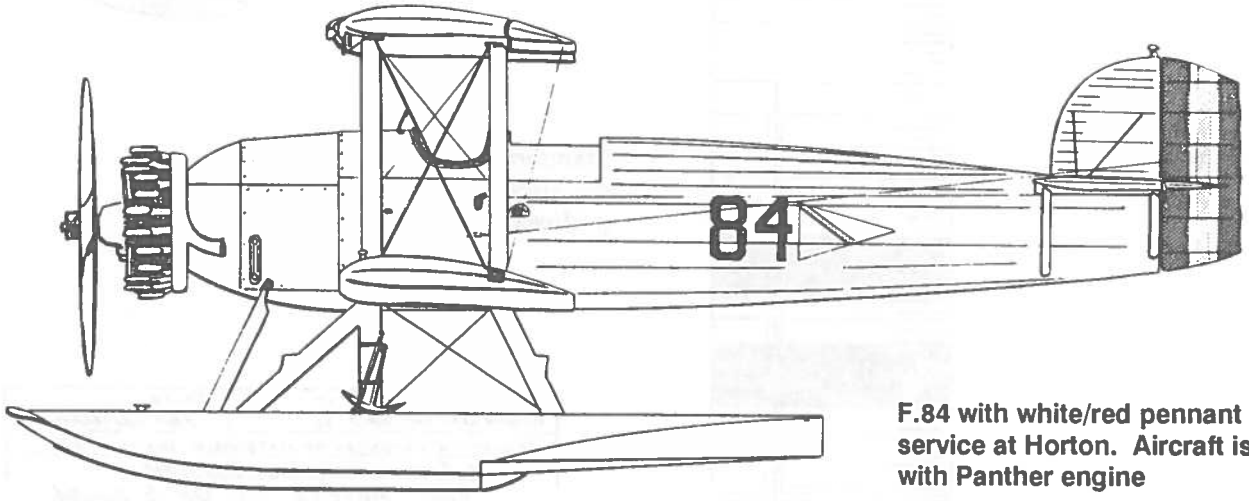
DOUGLAS DT 2 — TEGNING: Per Wiium

TEGNET PÅ GRUNNLAG AV MATERIALE SKAFFET AV:
STEIN GULLI, BJØRN HARSTEN,
KNUT ARVENG OG OLE G. NORDBØ





F.80 in early form with tailskid and MF crest under front cockpit



F.84 with white/red pennant signifying service at Horton. Aircraft is a DT-2c with Panther engine

MESSERSCHIMITT Me109, 1/48-scale decals, Ventura Hobby Products, PO Box 10-213, Wellington, NEW ZEALAND.
This 11 cm by 16 cm sheet contains markings for three Bf-019 and one Me-262: (1) Bf-109E '6-127' Spanish AF in 1952. (2) Bf-109G-10 '4' Croatian Squadron in 1945. (3) Bf-109G-4/R6 Erich Hartmann's aircraft. (4) Me-262B-1a 'Vera' with USAAF insignia. These decals are sharply printed and in perfect register. The instruction sheet provided both side and top views for proper placement of the markings.

MESSERSCHMITT Bf 109s and Me 262, 1/72-scale decals, Ventura Hobby Products, PO Box 10-213, Wellington, NEW ZEALAND.
This 13 cm by 19 cm sheet provides the markings for 7 Bf-109: (1) Bf-109E '6-127' of Spanish AF in 1952. (2) Bf-109C '6-56' of Spanish AF in 1939. (3) Bf-109G6 'MT-422' (with shark teeth) of Finnish AF in 1948. (4) Bf-109G6 'MT-452' (with 'bat') of Finnish AF in 1948. (5) Bf-109G2 'MT-201 of Finnish AF in 1943. (6) Bf-109G6 'MT-501' (with 'crow') in 1947. (7) Bf-109G10 '4' of Croatian Squadron in 1945.
The instruction sheet provides side and top view of all aircraft. Once again, printing is sharp (the detailing on the 'bat' is particularly impressive) and register is perfect.
All the Finnish insignia, both swastika and roundels, have the white covered by a wash of light blue. Soumen Ilmavoimien Historia #6 on the Messerschmitt Bf-109 has color drawings of all these aircraft and all have white insignia, as does INSCALE decals for the two aircraft it duplicates (201 & 452). This is a small quibble since the Spanish and Croatian decals are great and the Finnish national insignia are easily replaced.

"I've just completed another visit to Thailand, and while there picked up some decals which may be of interest to SAFO readers. Printed in Thailand under the tradename 'Great Decals' (no address available) are the following six sheets, all in 1/72 scale: (1) T-33, O-1, SB2C; (2) F-86F, F-5B, AC-47; (3) F-86D, T-6G, OV-10; (4) F-86F, F-5A, UH-1; (5) F-84G, F8F (blue); and (6) A-37, S-2, F8F (silver).
"These decals are well printed, with the Thai roundels in perfect register except for the tiny (ca. 3 mm) roundels on the OV-10 and A-37. They're printed matt, but unfortunately on a high-gloss carrier film. If any reader wants some, I've got a couple of each available. In exchange, I'd appreciate the Cambodian roundels from Microscale 72-102 (only the Cambodian roundels are necessary) or the 'Running Elephant' Thai insignia from Hasegawa's 1/32 or Nichimo's 1/48 Oscar (Ki-43) kits. While on the subject of decals, does any reader know of a source of 'Air America' titles for various 1/72 aircraft?
John MacGregor (SAFCH #706), 13 Foggyley Gardens, Dundee, DD2 3LG, SCOTLAND.

BRISTOL BEAUFIGHTER, 1/72-scale decals, Aero Decals #004.
This small sheet (8 cm by 9 cm) provides one set of national markings and complete markings for two Beaufighters VIF of 307 Polish Squadron: dark green and medium sea grey 'EW R' X8005 and all black 'EW V' EL146. While the instruction sheet is self contained, the fastidious modeler will want to refer to the TBU on the Beaufighter (#67) which has a color 5-view drawings of 'EW R' and a color side-view of 'EW V'. The printing of these decals is sharp, the colors dense, and the register 'spot on'.

VICKERS WELLINGTON, 1/72-scale decals, Aero Decals #007.
This sheet is every bit as good as that described above, and it is a little larger (9 cm by 11 cm). Markings are provided for four Polish Wellingtons: a Mk.IV bomber 'GR Z' Z1277 of 301 Squadron, and three Coastal Command aircraft with 304 Squadron; a Mk.X 'S' (for Sugar) HZ258, a GR.XIII 'A' HZ551 (with a line of radar masts on top of the fuselage), and a GR.XVI 'QD S' HF208 (with chin radar dome and Leigh light). Once again, the instructions are sufficient, but TBU #68 has color drawings of all four of these aircraft.

AVRO LANCASTER, 1/72-scale decals, Aero Decals #009.
Another excellent sheet (9 cm by 14 cm) with markings for three Lancasters of 300 Polish Squadron: two Mk.Is 'BH P' PA220 and 'BH N' LL807, and one Mk.III "BH F' RF245. The latter carries the well-know mission markings consisting of bombs, skull and cross-bones, champaign glasses, and an undressed young lady seated in a champaign glass. All three aircraft are shown in color in TBU #95.

HAWKER TYPHOON, 1/72-scale decals, Techmod.
The well-printed sheet (8 cm by 12 cm) provides decals for two Typhoons: a Mk.Ia 'PR G' R7752 of 609 Squadron flown by R.P. Beaumont in 1942 and a Mk.Ib 'TP F' of 198 Squadron also from 1942. The red center and the yellow surround of the roundel are printed separately to avoid any problems with the register.

BRISTOL BEAUFIGHTER, 1/72-scale decals, Polish manufacturer unknown.
This little sheet (9 cm by 9 cm) provides markings for three Beaufighters: a RAAF Mk.XXI 'DU H' A8-50 (mistakenly given as AB-50) and either of two Mk.VIF of 307 Polish Squadron; 'EW V' EL146 and 'EW R' X8005. This sheet differs in several significant aspects from the Aero Decals sheet of the same subject (and the TBU): it has the codes X8005 are in red instead of black and neither fuselage roundels has the yellow surround. While further research would be needed determine the correct schemes, this sheet gives every indication of not being very well researched.

"I found the roundel colors in Jim Larozas' sheet for Greek jets of great interest! At first glance I thought it was black, then under sunlight found it a very close match for FS 10545. According to David Klaus' work (p54), HAF roundel blue was 10545 from an undetermined time (the reference article covers only recent times from about the mid-fifties) up to 1979 (except for CH-47D, Do28D and Mirage F.1CG which are said to use 15102). Thereafter, FS 25183 was supposed to become general, but this is not borne out by the color photos appearing in Air Action for March and May '89. It seems that the darker 10545 still predominates. As I interpret the photos, we have the following: RF-84F - 15045 & 15102; RF-5A and F-5A - 15045; A-7H - 150454; F-4E - 15045; RF-4E - 25183; T-33 - 15045; F-84F (gate guard) - 25183; C-47 - 15102.
"Getting back to Jim's color, it does seem to be representative of current practice, but it should have been lightened a bit to allow for scale effect. I'd say it's too dark for 1/72-scale models. Nevertheless, a good effort, and I hope he continues the series, I can think of a lot of desirable markings."
John Gallaspy (SAFCH #955), PO Box 2254, Hawthorne, CA 90251.

(Continued from page 90.)
top views appeared in issue L+K #25 1979.
The kit is molded on a 19 cm by 21 cm sheet of thick white plastic. The parts are well delineated from the background plastic. Molding 'pips' are numerous and heavy, but they should be easy to remove without damaging the engraved panel lines. All flying surfaces are double surfaced, so it will probably be a good idea to construct spars, particularly for the wing which comes in four sections. (A excellent article in the May 1990 issue of IPMS/USA JOURNAL gives some good advise on building spars for vacuform models.) Landing-gear struts and wheels will have to come from the proverbial spares box (but, at least, you don't have to worry about a propeller). The cockpit canopy is thin, clear, and sharply molded. There are no decals furnished with the kit, but all you need is easily obtainable red stars.
The instruction sheet has a 1/72-scale 3-view drawing, sketches of interior detail, and a port, starboard, plan view of the black, green, over blue camouflage scheme. Inexplicably, the instructions do not give any information on the size and placement of the national insignia. The L+K drawings show large red stars (with white/red outlines) in six positions (vertical tail, fuselage, and on the lower surfaces of the wing very close to the tips.
The ThoVac kit of the Gribowski G-11 glider is an excellent kit of an unusual subject which, while simple enough for the novice vacuform builder, will still challenge the builder to improve his/her modeling skills. The finished model will test the identification abilities of even the most experienced aviation buff.
Unfortunately, no address is given for ThoVac, but the instruction are given in German so you might try one of your East German pen pals. (Review copy supplied by Matthias Rothe of IPMS/Germany.)

ROBERTS MODEL, 18 East Clay Ave., West Hazleton, PA 18201.
SAFCH member Jeff Roberts continues to expand his line of aircraft accessories while cleaning up some of the older offerings. His latest samples sent for review include in 1/48 a Hamilton Standard 3-bladed 13'6" propeller for the B-25, early F4U, etc. In 1/72 scale the new items include a Wright R-975 Whirlwind, and a 2-bladed 8'6" wooden prop for PT-19, and 2-bladed Hamilton Standard props of 10'6" and 11'7" diameter. All these are nicely molded in translucent white plastic with a minimum of flash. Among the re-worked items is a 6-cylinder Mercedes. Jeff is also redoing some of his stuff in metal; a pair of Swedish Madsen 7.9 mm and German Mg81 show a significant improvement over the corresponding plastic efforts.
Send an SASE (or IRC) to Roberts Model for a catalogue. Since the minimum order is $8.00, you might want to order a sample or two from the SAFCH Sales Service to help you judge if these parts might be useful in your modeling.

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AEROHOBBY #1, 34 pages, 21 cm by 29.5 cm.
This is the first issue of a new Polish monthly magazine "devoted to aviation enthusiasts and aircraft modelers." This issue's "cover story" features the F-4 Phantom II with 8 color side-view drawings, 15 side-view drawings delineating the development from the XF-4H-1 (sic) to the "Super Phantom", 2 pages of detailed 1/72-scale drawings of the F-4E, a double-page cutaway drawing, and tables on specifications and armament. Of greater interest to SAFO readers are the two pages of sketches of details of the PZL.23 Karas and PZL P.38 Wilk taken from pre-WWII magazines, and 3-pages with 18 photos of Polish aircraft either as captured by the Germans in September 1939 or as seen later carrying German insignia. A monthly feature on the world's air forces begins with the Fleet Air Air: a 4-page removable center section (you have to remove it to view the F-4 cutaway, but it messes up the pagination) lists the number of aircraft in use by type, the codes and names of aircraft-carrying ships, and Fleet Air Arm squadrons with aircraft, bases, & codes; the center page has 9 color side-view drawings of Fleet Air Arm aircraft. A photo page has photos of 3 modern LOT aircraft, a crashed Polish Salmson 2A2, and an overturned Lublin R-XIVb (photo and caption inverted purposely?).
This magazine has great potential, especially if the cover story and the air force series discuss more exotic subjects. The manager, SAFCH member Robert Gretzyngier, writes: "The next issue will consist of 48 pages instead of 32. For English speaking readers we will provide translation on request, usually covering 2 or 3 of the most interesting topics. Each issue costs is 2$; a one year's subscription (including p&p) is 20$. (A 1990 subscription costs only 15$ since there will be only 9 issues.) We accept IMO in US dollars only. Please add 1$ for bank charge. In the next two issues: P-24 fighter monography, Caproni Ca-87 'Polonia' drawings, Bf 110 in French hands, Polikarpov I-5 replica, Air Forces of the World - RAF, A-10 monography, SVA-5 drawings, Polish aircraft export before 1939."
The editorial office is ul. Biala 4, skr. poczt. 1004, 00-950 Warszawa; but it appears that orders should be sent to FENIX, ul. Miaczynska 67a, 02-637 Warszawa, POLAND. A small number of the first issue are available from the SAFCH Sales Service.

AERO MANUAL: MiG-23, 20 pages, 21 cm by 30 cm.
This is the first of a series of monographs on individual aircraft types. If my knowledge of the Czech language does not mislead me, future subjects will include the MiG-21F-Bis, MiG-29, and Su-25.
With only 8 pages of text and 4 photos, the majority of the pages are devoted to drawings. There are 6 side-view and 2 partial side-views) drawings in 1/72 scale showing the various variants: S, SM, M, MS, MLD, MF, UB, BN, 27M, & 27. Three double pages are devoted to 1/48-scale drawings of the MiG-23ML (port, starboard, top, & bottom). A nice feature is that the middle page is not stapled into the magazine so it can be removed to provide unbroken views of the 1/48-scale drawings behind it. Sketches of the cockpit, ejection seat, and cannon are also included. Camouflage schemes are given for 6 aircraft: Czech MiG-23ML '2410'; Soviet MiG-23MLD '38' in Afghanistan; Czech MiG-23MF '3641'; Libyan MiG-23M '6916'; Soviet MiG-27 '03' in Afghanistan; & Czech MiG-23BN '5735'.
Don't let the lack of color drawings mislead you. This series is highly recommended for all students of modern Soviet aircraft.
A number of MiG-23 Aero Manuals are available from the SAFCH Sales Service. People not wanting to miss any of the future issues might want to write to the author: Ing. Jiri Broz, Havlickovo Namesti 2127 B, 43901 Zatec, CZECHOSLOVAKIA.

AIR ACTION "A new French magazine with total colour throughout. Available directly from 6 Boulevard du General Leclerc, 92110 Clichy, France; or through Midland Counties Publications, 24 The Hollow, Earl Shilton, Leicestershire, England. Enquire for price, but each issue costs in the region of £3,75, and published monthly."
1. RAAF F-18; Mirage 2000N; SO.6000 Triton; C-130 firebomber; C-135F; Hungarian Air Force; RSI Bf 109; Spanish Air Force trainers.
2. RAF Lightning; French Air Force; Portuguese Air Force; RAAF F-18.
3. French Air Force in Djibouti; Austrian Air Force trainers; French Navy F-8; Swiss Air Force; European aircraft today.
4. Pakistan Air Force; Portuguese patrol aircraft; Mig-29 at Farnborough; A-7 Corsair; Greek RF-84F.
5. Pakistan Air Force; Moroccan CAP.230; West German JaboG 31; French des Cigognes; European exchanges; Swiss Air Force exercises.
6. William Tell 88; West German RF-4E; Esquadrille da Fumaca; Bolivian Air Force; S-3 Viking.
7. Belgian F-16; Canadian F-18; Greek RF-84F; West German RF-4E; Turkish F-16; Finnish Air Force; Joint exercises in Med; USMC helicopters.
8. 50,000 hours on French Jaguars; Soviet helicopters in Afghanistan; Japanese Air Force fighters; Greek Air Force; Swiss Air force anniversary; Harrier GR.5; NATO; West German F-4E.
9. French Air Force in Djibouti; Swiss Hunter; Le Bourget 89; Belgian Air Force; Asas de Portugal; civilian Migs.
10. USS Roosevelt; West German Army helicopters; Polish Air Force; Le Bourget 89; Luftwaffe Jagd 3; Maple Flag 22.
11. Norwegian F-16; USAF F-15; Czech Air Force; Belgian Magister; RAAF CH-478; RAF.
12. Swedish Viggen; French Air Force flying school; Kangaroo 89; Mirage M5; Luftwaffe Jagd 54; Norwegian Sea Kings; SAAF C-47.
13. Malaysian Air Force; Afghani defectors; Israel A-4; East German MiG-23 & Mi-8; Ramstein 1960; Dutch Air Force.
14. Taiwanese Air Force; Moroccan Air Force; West German P.149; USAF F-16; USMC; Koubinka Museum; SAAF P.166S.
15. French Navy F-8; SR-71; Chilean T-35; Reforger 90; Belgian C-130; Danish Air Force.
16. RAAF Mirage; French Navy Fregate; F-117; Ecuadorian Mirage F.1 & Jaguar; French Army Gazelle; Chilean Air Force; water bombers.
17. Uruguayan Air Force; Luftwaffe JG301/JG302; Philippino UH-1 operations; French exercise 90; French Navy Super Etendard; Monino Museum; Portuguese A-7P; French model show.
Mick Burton (SAFCH #303), 30 Stride Ave., Copnor, Portsmouth, Hampshire, PO3 6HL ENGLAND.

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"I am currently gathering material on the Canadair-produced T-33A(N). Understandably, the Canadian segment is not too difficult to handle, but foreign users of this particular type have been very difficult to research. If any member has information on the use of the CL-30/CT-133 in the service of Bolivia, Turkey, Greece, and Portugal (particularly photos), I would be grateful to hear from them."

Jim Lyzun (SAFCH #920), RR #5, Thunder Bay, Ontario, CANADA P7C 5M9.

"Require simple general arrangement drawings of the aircraft: Breda A-4, Breda Ba-7, Breda Ba-9, Breda Ba-19, and IMAM Ro-5"
John Jarratt (SAFCH #972), 17 Linsdale Gdns., Gedling, Nottingham, NG4 4GY, ENGLAND.

"The project on the 50th anniversary of WWII events is quite interesting and I hope it continues. I would be very interested to see something on the air forces of the Japanese satellites: Cochin China, National Gvt. of China at Nanking, Manchukuo, etc.
"By the way, I would like to know the secret of reaching these research materials. I am an economics professor, so I know something about research and am pretty good at getting what I want out of a library, but I cannot seem to come close to what contributors to SAFO accomplish. I have exhausted the resources of my county's library system, have bombarded them with inter-library loan requests, visited the collections of several major universities and cities, and even tried the New York City Public Library. How do your members do it? Would the answers make a good SAFO article?"
Tom Hodson (SAFCH #812), 840 Park Rd., Morris Plains, NJ 07950.
[Editor's note: Tom has a couple of good ideas here. Anyone want to take them on?]

"The following remarks refer to the Belgian Alpha Jets that were illustrated in SAFO #53: All Belgian Alpha Jets were delivered in natural metal and then camouflaged in the paintshop at Brustem Air Base. Aircraft AT-01 was the only one to carry a dayglo band around the fuselage and this was removed when all Alpha Jets received dayglo wing-and and tailtips. Since student pilots frequently practiced air combat with, for example, four 'friendly' Alpha Jets against four 'enemy' Alpha Jets, to distinguish friend from foe, a dozen Alpha Jets were assigned to play the enemy and have had dayglo painted on their tails.
"The red 'Shooting Star' was 'zapped' by someone from 2 Squadron. (Even F-16s of other squadrons were zapped). The six aircraft silhouettes represent F-16s; during training the Alpha Jets not only practiced against other Alpha Jets, but also against F-16s. After each F-16 'kill', the victorious Alpha Jet received a 'kill' marking on its port side.
"Before closing I'll mention that AT-29 is back in its normal camouflage pattern, and AT-11 has been repainted in a new colorful scheme.
Danny Coremans (SAFCH #927), Provinciestraat 8, 2018 Antwerpen, BELGIUM.
[Editor's note: Danny's DACO Products have released several new decals for colorful Belgian Alpha Jets and F-16s.]

"The following is a corrected version of the IDF/AF Sinai campaign unit list originally published in SAFO #54. Only aircraft operational on the eve of operation 'Kadesh' are includes; another 100 or so aircraft of various types were held in reserve.

IDF/AF ORDER OF BATTLE OCTOBER 29 1956

Sqn	Type	Qty	Base
69	B-17	2	Ramat David
100	Cub	0	
69	B-17	2	Ramat David
100	Cub	0	Sde Dov (homebase)
		11	Sde Teyman
		4	Eilat
101	Mystere	16	Hatzor
103	C-47	16	Ekron
	Noratlas		Ekron
105	Mustang	13	Ramat David
110	Mosquito FB6	13	Ramat David
113	Ouragan	22	Hatzor
115	Mosquito PR16	2	Ekron
	Meteor T7*	3	Ekron
116	Mustang	16	Ekron
117	Meteor F8/PR9	11	Ekron
119	Meteor NF13	2	Ramat David
140	Texan	17	Sde Teyman
147	Stearman	25	Ramleh

* Modified for photo-recce work."
Leif Hellstrom (SAFCH #786), Servitutsvagen 3, S-145 59 Norsborg, SWEDEN.

"In SAFO #54, Ted Koppel wondered about the markings of Romanian AF. Enclosed is a photo of Romanian SA-330 Puma I took at Constanza on 24 July 1987 which clearly shows the roundel. I also have seen photos in magazines of aircraft with these markings."
Frans Calsyn (SAFCH #854), Oude Staatsbaan 21, B-9991 Maldegem, BELGIAN.
[Editor's note: The photo Frans sent is unsuitable for publication. The only other photo I've seen of a contemporary Romanian aircraft with roundels appeared in MODELISM 1-1990; the prototype IAR-99. By the way, since several members have asked; our Ted Koppel is not TV's Ted Koppel.]

"From personal observation at Bucherest airport recently, I can state that the Romanian AF has reverted to the pre-war roundel. It was seen on an An-26 in four wing positions and vertical tail; aircraft was medium green overall with dark green patches. Undersurfaces and codes were not visible.
"According to reports in the Thai press, the RTAF has given up the idea of obtaining Chinese F-7M Airguard fighters, Despite an apparently 'unbeatable' price, the Thai AF felt that the obsolescence of the basic design made it a poor investment. Extra F-16s are being sought, as are second-hand (apparently renovated ex-USAFF) A-7s and A-10s. The Royal Thai Navy, meanwhile, is pressing for the acquisition of a helicopter carrier, with an Italian design currently being favored."
John MacGregor (SAFCH #706), 13 Foggyley Gardens, Dundee, DD2 3LG, SCOTLAND.

"Regarding the Iranian Tomcats, the August 1988 issue of AIR FORCES MONTHLY had a photo of a camouflaged Tomcat at Davis-Monthan AFB with American nation insignia on the forward fuselage. The number of these aircraft in Iranian service
as often given as 77 and I assumed that some had crashed, but were some of the first batch of 80 not delivered at all?
"What is the correct spelling for Romania? You always spell it with an 'o', but sometimes it is Rumania, and I recently came across Roumania in an old magazine. A small point, but I would like to get it right. [Editor's note: All three spellings are around, but the Romanians use Romania, so this it what I use. After all, their ancestors were Romans, not Rumans.]
The decision on a Strikemaster replacement for the RNZAF has finally been made. The MB-339C was announced the winner on 19 December 1989, and the contract signed on 9 May 1990. The NZ $266m order is for 18 aircraft, cockpit simulator, spares, and training. Delivery will be 1991-94. The aircraft will go to 14 Squadron at Ohakea, initially taking over the Fighter Lead-In Training role, and, as more become available, the Advanced Flying Training role as well. The Strikemasters will be retired; one will probably go to the RNZAF Museum at Wigram, while others will become instructional airframes. The colour scheme is to be dark green FS34079, light green FS34102, and dark grey FS36081 overall. Red/white/blue Kiwi roundels will be carried in four positions (each side of the rear fuselage, above the port wing, and below the starboard wing), with tapered fin flashes. Serial numbers will be NZ6460-77. This information comes directly from the RNZAF.
On 17 January 1990, the NZ Post Office issues an 80c stamp for the 50th Anniversary of Air NZ, showing a Short S.30 Empire-class flying boat and a Boeing 747-200. On 16 May, a set of 6 stamps, The Achievers, was issued. The 50c stamp shows Jean Batten and her Gull; the 80c Richard Pearse, the first New Zealander to fly, and his aircraft; and the $1.00 General Vernard Freyberg, the commander of the 2nd NZ Division in WW2."
Paul Adams (SAFCH #773), 81 Ponsonby Road, Ponsonby, Auckland 1, NEW ZEALAND.

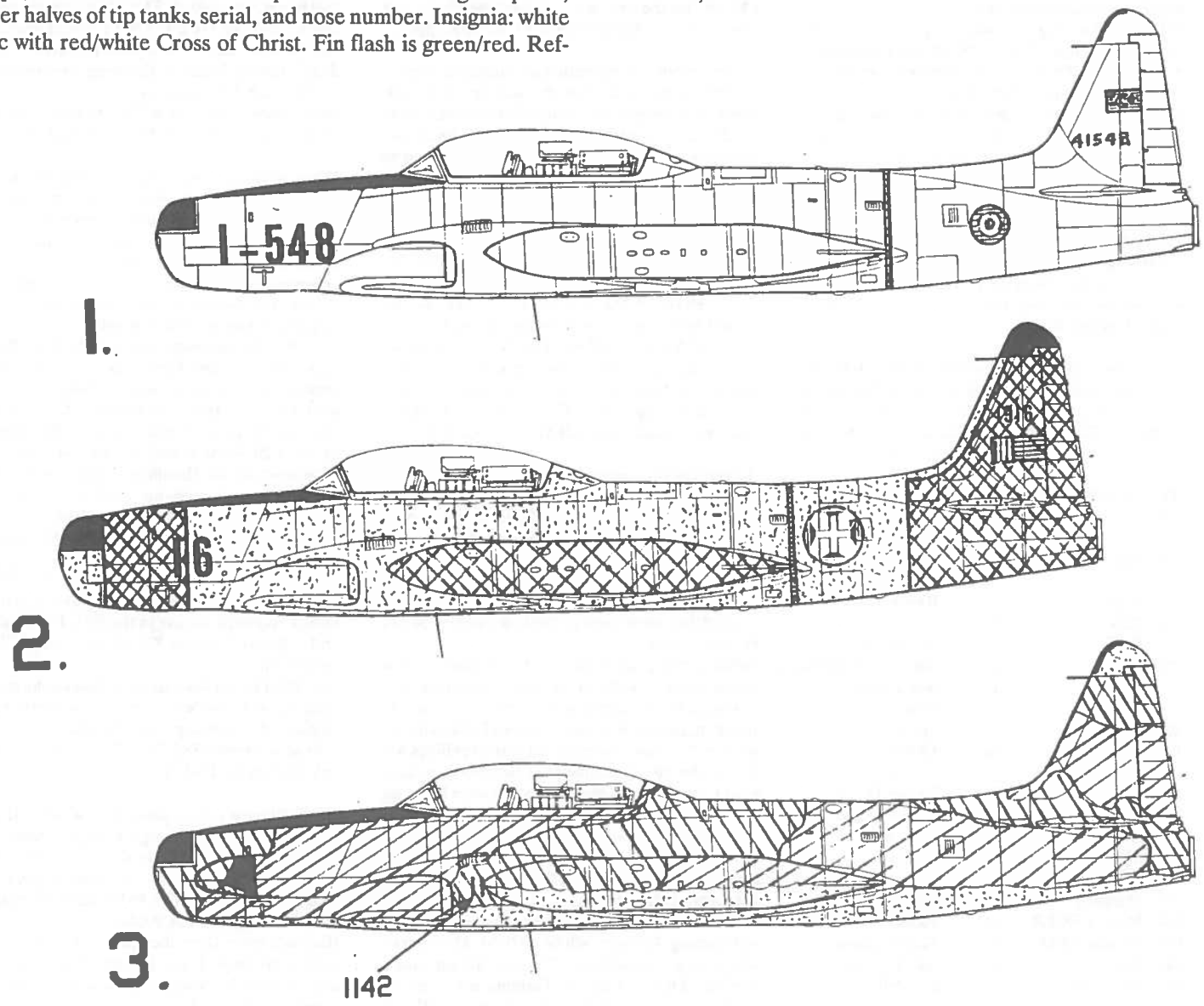
"Here is some newly uncovered information that adds to the article about Finnish Blenheims (SAFO #53). Mr. Komuda, recently uncovered a list of German equipment sold abroad during 1937-1943. This list contains not only German-made equipment, but also war booty. According to this source, the Germans sold the following 'Polish' engines to Sweden and Finland:
"In 1940, the Germans sold 38 PZL-built Pegasus XIX engines to Sweden for use in the SAAB-built version of the Ju-86K. Also, in 1940, the Germans sold 12 PZL (Bristol?) Pegasus XX engines to Sweden. (Both the Pegasus XIX and XX were used in the PZL-37Abis and B). In 1943, one PzInz (license-built de Havilland) Major was sold to Sweden; it was probably used to re-engine the RWD-13 interned in Sweden in 1939.
"In 1941, Finland bought 25 Bristol Merkury VIII engines (of either Polish or Yugoslav origin) and 42 PZL-built Merkury VIII engines. In 1942, Finland bought 30 ex-Polish Bristol Merkury VIII (obtained originally for use in the PZL P-50 Jastrzab) and 6 Bristol Pegasus XII (from Polish PZL-37A bombers).
"In 1988, I found documents in Stockholm showing that, in 1939, Sweden bought a few Merkury VIII engines of Polish origin for Finland."
Janusz Ledwoch (SAFCH #780), PO Box 106, 00-961 Warsaw 42, POLAND.

"How about a pin or patch with a SAFCH logo? Maybe a contest to design a logo? I don't know what could be used that would indicate the connection to the small air forces, but what do you think?"
Tom Hampton (SAFCH #613), 820 Chestnut Ave. #16, Los Angeles, CA 90042.
[Editor's note: Over the years this idea has come up several times. If you like the idea, let me know and, if there is enough enthusiasm, I'll try to get something started.]

PHOTO T-BIRDS

1. RT-33A, 54-1548 (1-548), 113 Filo, Turk Hava Kuvvetlerj (Turkish Air Force), Eskisehir, 1987. Overall natural metal. Matt black anti-glare panel and inner halves of tip tanks. Black serial numbers and 1-548 which is outlined in white. Insignia: red/white/red roundels in six positions. Fin flash is red with white crescent and star. Reference: Air Forces Monthly, April 1988.
2. RT-33A, 1916 (ex 53-5474), Esq. 103, Forca Aerea Portuguesa (Portuguese Air Force), 1986. Overall light grey. Dayglo red nose stripe, tail and outer halves of tip tanks. Black anti-glare panel, inner halves of tip tanks, serial, and nose number. Insignia: white disc with red/white Cross of Christ. Fin flash is green/red. Reference: Koku Fan, January 1986.
3. RT-33A, 1142, Royal Thai Air Force, 1975. Dark green (FS595A 34079) and tan (FS595A 30219) camouflage over light grey. Matt black anti-glare panel, serial on air intake. No national insignia carried. Reference: Famous Aircraft of the World #63 F-80/T-33.

Mike Mirkovic (SAFCH #465), 11723 Beaufort St., Mt. Lawley, WA 6050, AUSTRALIA.





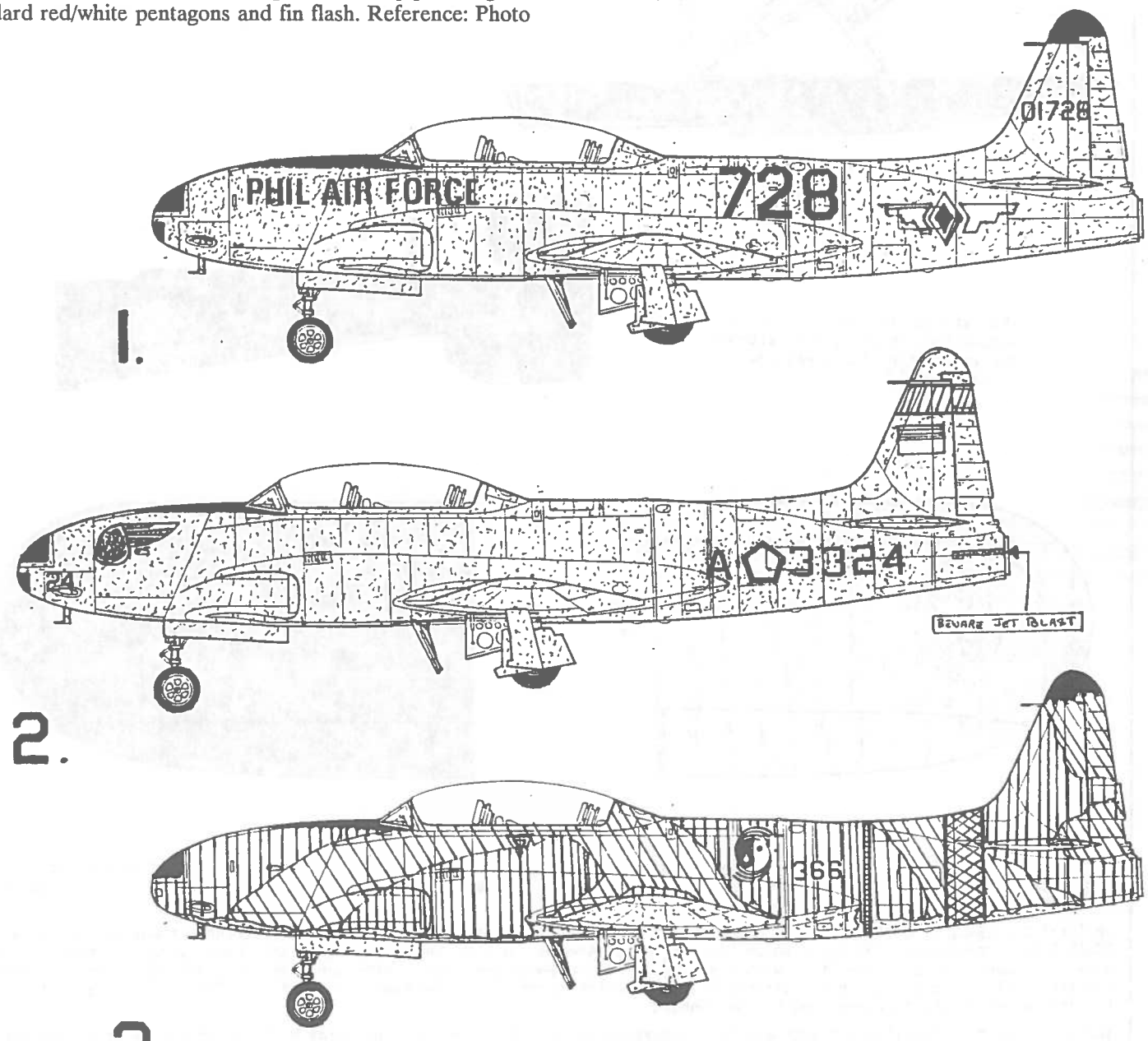
SOUTH EAST ASIAN T-BIRDS

1. T-33A, 01728, 105 Combat Crew Training Squadron, 5th Fighter Wing, Philippine Air Force, 1988. Overall light grey. Matt black serial, lettering, fuselage number, and fin tip. Insignia (four positions): white diamond outlined red with blue inner diamond, white wings outlines in blue.Reference: Air Forces Monthly, April 1988.

2. T-33A, A-3324, Wing Pendidiokan No. 1, TNI-AU (Indonesian Air Force), late 1970's. Overall light grey. Matt black anti-glare panel, inner halves of tip tanks, serial, and nose number. Yellow fin stripes outlines in black. N.B. White stripe with red "Beware Jet Blast" on fuselage near tail pipe. Insignia: standard red/white pentagons and fin flash. Reference: Photo supplied by Mick Burton (SAFCH #303)

3. T-33A, 366, 131 (Harrier) Squadron, Republic of SIngapore Air Force, Paya Lebar, 1987. Dark green and earth brown camouflage over light grey. Dayglo orange outer halves of tip tanks and rear fuselage stripe (outline in black). Matt black anti-glare panel and inner halves of tip tanks and fin tip. White serial number. Insignia: red/white Yin/Yang roundel in four positions. Reference: Flugzeug, June/July 1987.

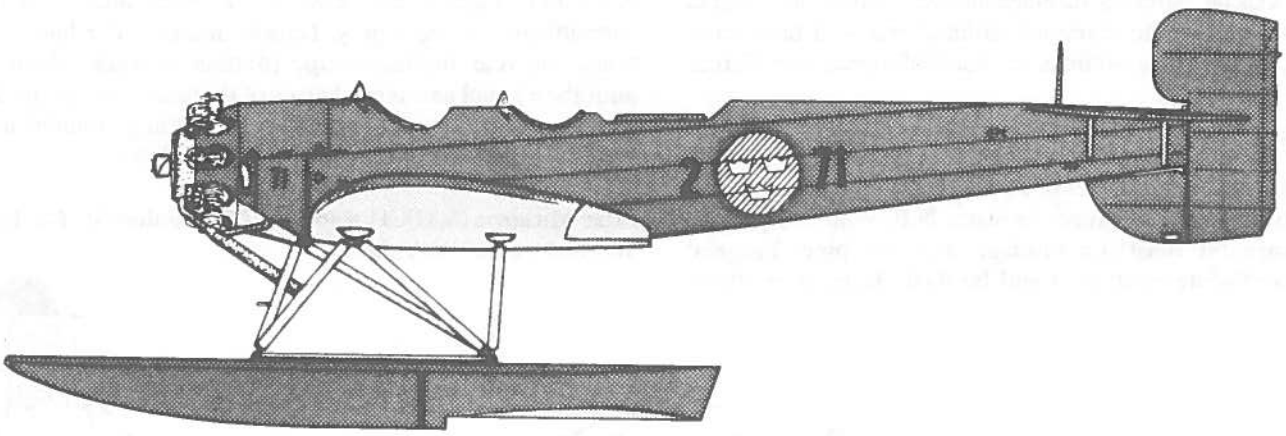
Mike Mirkovic (SAFCH #465), 11723 Beaufort St., Mt. Lawley, WA 6050, AUSTRALIA.

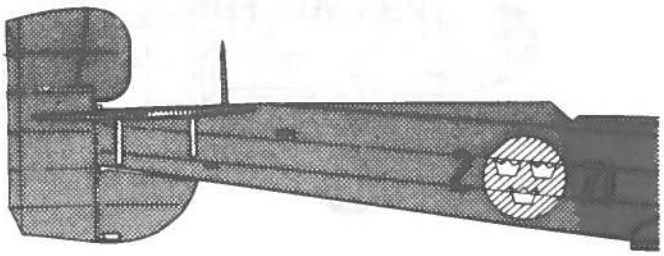




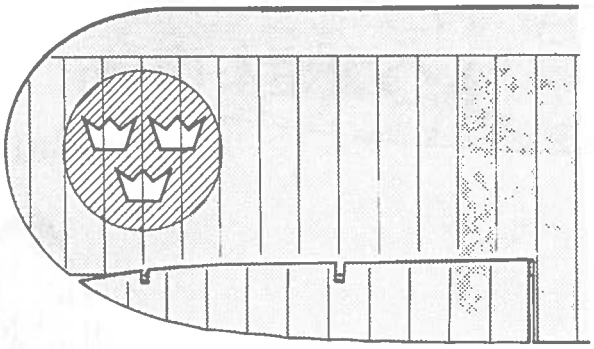
N.B. All aircraft carried tip tanks which are not shown on drawings

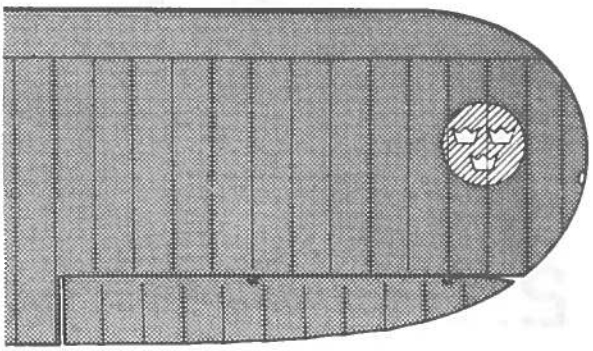
Heinkel vs. Heinkel





The national insignia are per the regulations of 1937, i.e. without the yellow ring (this was added in June 1940)





Of the more than 300 foreign military aircraft to come down in Sweden during WWII, only one was credited as shot down by an aircraft of the Royal Swedish Air Force. It is ironic that the aircraft in question was one of the oldest ones in Swedish service at the time.

On April 21, 1940, a He 111P (W.Nr.2515 B3-FN of 5/KG 54) crossed the Swedish coast near Marstrand. It was spotted by a RSwAF S 5A (Swedish-built He 5/t), which had difficulty keeping up with the He 111. When the German aircraft began to draw away, the Swedish pilot opened fire with his single, fuselage-mounted 8 mm machine gun. The gun jammed after only 28 rounds, but the He 111 had been hit in the starboard engine, which caught fire. The bomber crashed near Bremnäs and was destroyed by fire, although the four-man crew escaped unhurt.

The victor of this "duel" was Lieutenant Curt Andersson and his observer Sub-lieutenant H. Olsen of the F2 Wing. The aircraft was S 5A serial 471, coded 2-71. It was built in 1931 and survived in RSwAF service until 1948, having been converted to an ambulance aircraft in 1942.

The aircraft paint-scheme was Olivgrön W.30 (FS 24096) on top and Ljust Blågrå W.31 (FS 26329) underneath. The undersides of the floats were yellow. Serial numbers and codes were painted in black.

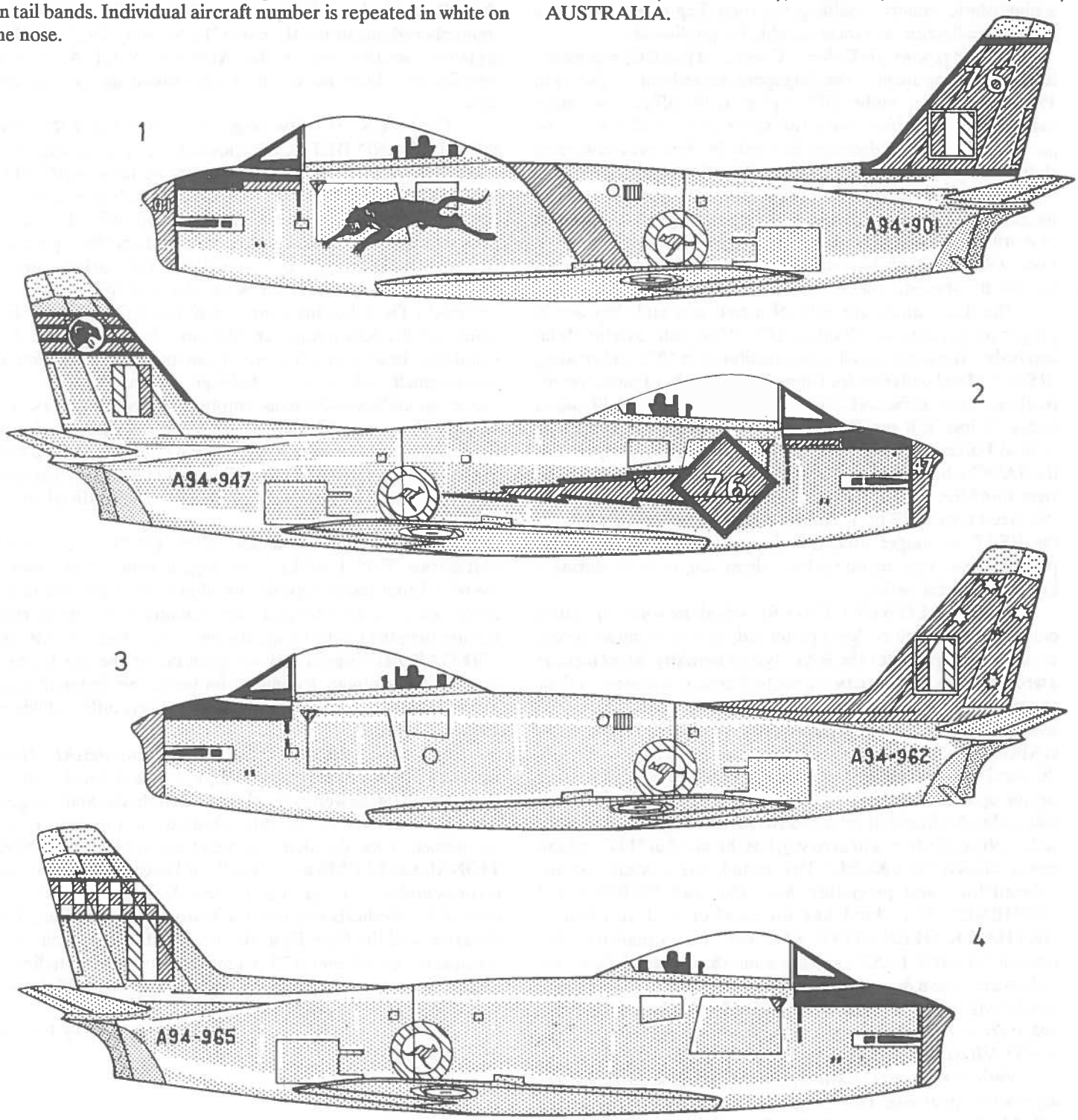
Scale 1/72

Leif Hellström (text)/Leif Fredin (drawings)

COMMONWEALTH SABRES

1. Commonwealth Sabre A94-901, "Black Panther" aerobatic team, No. 76 Squadron, RAAF. Fuselage band and vertical tail are red outlined in black. Black panther insignia. White numerals "76" on fin. Individual aircraft number "01" is repeated on nose in white.
2. Commonwealth Sabre A94-947 of the "Red Diamonds" acrobatic team, No. 76 Squadron, RAAF. Fuselage and tail markings in red and black. Black panther's head on white circle on tail bands. Individual aircraft number is repeated in white on the nose.
3. Commonwealth Sabre A94-962 of No. 3 Squadron, RAAF, Malaya. Standard finish with red fin and rudder with white "Southern Cross" insignia. White outline to fin flash.
4. Commonwealth Sabre A95-965 of No. 767 Squadron, RAAF, Malaya, late 1960's. Standard finish with black-outlined red and white checkered band on tail.

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AIR FORCE EMBLEMS OF SINGAPORE

INTRODUCTION: These emblems were worn on uniforms and flight clothing, not on aircraft. However, some unit emblems, or variations thereof, do occasionally appear on aircraft, thereby acting as an aid in identification for both the collector of insignia and the student of air forces, a fact emphasized in the informal and highly irregular 'Small Air Forces Collector' pieces in past issues of SAFO. The current presentation came about through temporary access to, and instruction in, a photostatic camera, enabling the recording of portions of a personal collection in a form suitable for publication.

The Singapore Air Defence Command (SADC) was established as a component of the Singapore Armed Forces (SAF) in 1968, although September 1971 is given as the official formation date. SADC members wore the same green uniform as the ground forces, being distinguished only by their arm-of-service shoulder patch and collar badge. (The former is properly a "formation sign" in British terminology and "shoulder sleeve insignia" in US military parlance.) The SADC gained autonomy in April 1975 and was renamed the Republic of Singapore Air Force (RSAF). New, blue uniforms were instituted, apparently without the shoulder patch but still with the collar badge.

The illustrations are 36% of actual size and they are in proper proportion to each other. TOP ROW, left to right: Metal cap badge, the same for all ranks, instituted in 1975 and reading "RSAF". Metal collar badge (depicting a Hawker Hunter) worn by all members of the SADC and RSAF. Cloth pilot qualification badge ("wings"); if pre-1975, the "SAF" could mean Singapore Armed Forces rather than Air Force. Cloth shoulder patch of the SADC; a black and white eagle on red. This sample is for the right shoulder; the left one would have the eagle reversed, so it still faced forward. This is demonstrated by the next pair. Since the RSAF no longer used this design on its daily uniforms, perhaps these were made up for a flight suit, or worn during a brief transitional period.

THE FOLLOWING TWO ROWS show some squadron crests (or other unit badges) patterned, as with many air forces around the world, after the RAF style of heraldry. Most include a wreath topped by the national coat-of-arms of a lion and a tiger supporting a shield over the "MAJULLAH SIGNAPURA" motto. Other common elements are "REPUBLIC OF SINGAPORE AIR FORCE", the unit number (repeated twice), and the word "SQUADRON" (exceptions will be noted), all on a disc resting upon a scroll bearing the unit motto. Thus, the first one, with a blue & white stylized a/c (bird?) symbol against red/white/yellow objects (a bow and arrow?), has the number "144" and the motto "DARE TO EXCEL". The second, with a brightly-multicolored bird and propeller, has "120" and "STRIVE TO ACHIEVE". The third has no number and substitutes "SKYHAWK OPERATING FLIGHT" for "squadron"; the motto is "STRIKE FAST", and the somewhat crude Skyhawk a/c is shown in brown & green camouflage. The fourth one omits the words "AIR FORCE" and "SQUADRON" and has no number, just a green & light blue Skyhawk; however, the motto, "ALWAYS VIGILANT", is the same as for Tengah AB, below.

Various references have reported the names of the following RSAF squadrons: 120 "Condor", 130 "Eagle", 140 "Osprey", 141 "Merlin", 142 "Gryphon", 143 "Phoenix", and 150 "Falcon". These undoubtedly are illustrated in the respective squadron crests.

Continuing on the THIRD ROW, we have a bird's head and a straight-wing a/c, both in black, against a world globe; the number is "122" and the motto is "DEPENDABLE". The second one illustrates a yellow & black bird and white sword(?); "143" and "WE DARE" designate the squadron and its motto. The third one, with "149" and "STEADFAST", show a gold (metallic thread) & black eagle against a black shield. The last one, unnumbered substitutes the name "TENGAH AIR BASE" in the squadron position, repeats the "ALWAYS VIGILANT" motto, and displays a black horse's head and a sword against a red castle tower.

The FOURTH ROW begins with "120/123 SQN / RSAF 8th THAILAND DETACH", showing a grey wide-winged bird framing Thai and Singapore flags. Next we have "AIR THAISING II / FRIENDSHIP THROUGH COOPERATION". The somewhat crude embroidery illustrates two stylized a/c leaving contrails representing the flags of Thailand and Singapore, each of the latter with the respective national a/c marking superimposed. (Does any reader know the dates of this particular air exercise?) The following is an aircraft patch ("RSAF / F-5E/F") which, oddly, does not picture the aircraft, although the duplicated tiger head is a perfect visual pun for "Tiger II"! (This patch was originally sold to me as belonging to the Royal Saudi Air Force, an understandable assumption. At least the person had enough sense not to claim it was for the Royal Swedish Air Force.) The next circular design repeats the "RSAF" cap badge as shown at the top of the page. This could be an unofficial patch worn on a civilian jacket, or perhaps a semi-official one for flight-suits.

The same could be true for the FIFTH ROW: a somewhat outrageous "F-15 EAGLE" one (again without a/c) and the oversized pilot-badge-type design, although it is possible that the latter could be an enlarged representation of a more recent version than the pilot's badge shown earlier. The "GUARDS / 2 / SINGAPORE" shield may not even be for the Air Force. (It was originally thought it could be for the Commandos, although, it now appears the latter group has an entirely different winged-dagger design.)

And finally, the BOTTOM ROW shows the AF officers' shoulder straps for the ranks of Major, Captain, Lieutenant, and 2nd Lieutenant, as well as the sleeve patch for the Staff Sergeant.

POSTSCRIPT: As this photostatic-copying project progressed, it was decided to concentrate on the ORGANIZATIONAL EMBLEMS in the Small Air Forces Collection. There is considerable coverage of South East Asia, but, with the exception of the Netherlands, less for Europe, the Far East, Latin America, and the Near East. Before time finally ran out, it was possible to record almost 21 pages of illustration, including one of aircraft patches of various nations. Perhaps some of this work will appear in future issues of SAFO.

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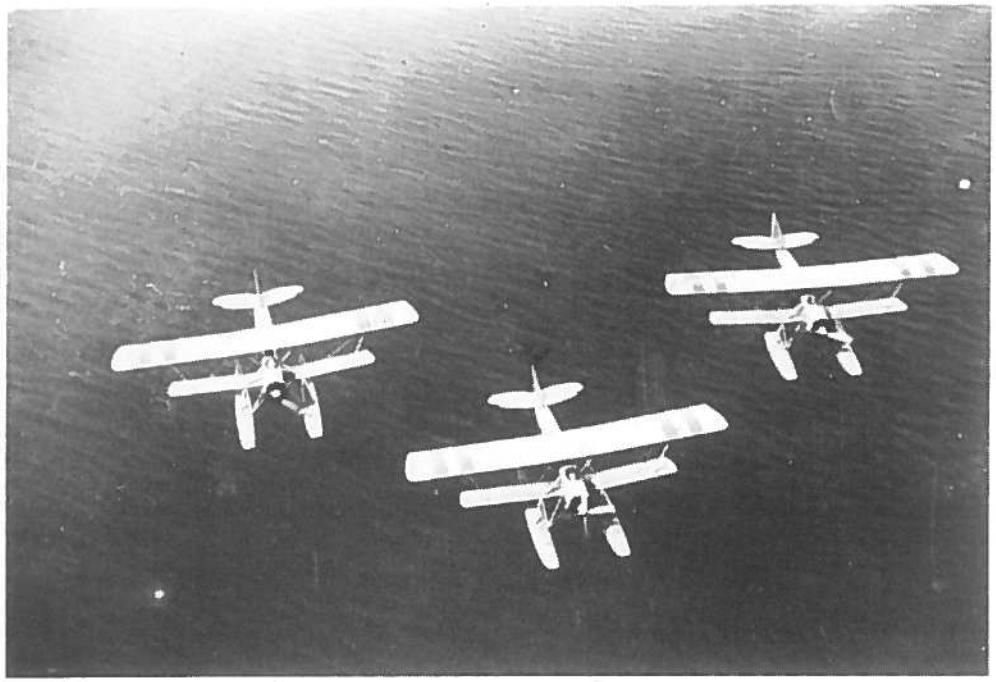
SINGAPORE



Ted Koppel
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